

DRAFT 2012 CIF ANNUAL REPORT 5 DECEMBER 2012

2012 ANNUAL REPORT

# CREATING THE CLIMATE FOR CHANGE

---

With feature section:

**Prepare, Empower, Prosper**  
Climate Resilience in the CIF Portfolio

---

*DRAFT 5 December 2012*

*All numbers as of September 2012 and are subject to change*

*Final report will reflect end-of-calendar-year numbers as of December 31, 2012*

*Yellow highlighted text indicates editor note (not part of content)*

# CONTENTS

---

Acronyms and Abbreviations

Boxes and Figures

## Creating the Climate for Change

### The CIF: \$7.2 Billion to Spur Climate Resilient, Low Carbon Investments

#### CIF in Numbers: Funds Being Allocated and Ready for Action

#### 2012: Investment Planning Giving Way to On-the-Ground Implementation

- Planning Paying Off as Projects Begin to Take Off
- Enhancing Commitments to Deliver the Promise of the CIF
  - The Clean Technology Fund (CTF)  
*\$2.2 billion approved, expected to leverage \$18 billion in co-financing and contribute toward 537 million tons of CO2 emissions*
  - The Pilot Program For Climate Resilience (PPCR)  
*\$288 million approved, expected to leverage \$327 million in co-financing*
  - The Forest Investment Program (FIP)  
*First \$57 million approved, expected to leverage \$703 million in co-financing*
  - The Program for Scaling Up Renewable Energy in Low Income Countries (SREP)  
*First \$46 million approved, expected to leverage \$572 million in co-financing and support the development of 250 MW of renewable power*
- Addressing Public and Private Investor Risks  
*CIF Financial Instruments*
- Understanding CIF Impact  
*Strengthening Results Frameworks*
- Learning How to Learn  
*Advancing CIF Knowledge Management*

#### 2013: Building on Forward Momentum

#### Prepare, Empower, Prosper: Climate Resilience in the CIF Portfolio

- From Science to Solutions  
*Climate Resilient Development in Our World*  
*By the World Bank Group*

DRAFT 2012 CIF ANNUAL REPORT 5 DECEMBER 2012

- Supply and Demand  
*Ensuring Food, Energy, and Water Security in Africa*  
*By the African Development Bank*  
  
*Keeping Latin American and Caribbean Watersheds in Balance*  
*By the Inter-American Development Bank*
- Spotlight on Climate Resilient Agriculture
- Built to Last  
*Climate Proofing Infrastructure in Asia*  
*By the Asian Development Bank*
- Adaptation and Business  
*Unlocking the Potential of the Private Sector in Adapting to Climate Change*  
*By the European Bank for Reconstruction and Development*

**ANNEXES** [to be added]

- A. Contribution Status
- B. Endorsed Investment Plans and Approved Projects
- C. Members of Trust Fund Committees
- D. Observers of Trust Fund Committees

**CIF Map (insert)** [to be added]

## ACRONYMS AND ABBREVIATIONS

---

ADB	Asian Development Bank
AfDB	African Development Bank
AWF	African Water Facility (AfDB)
BSR	Business for Social Responsibility
CIF	Climate Investment Funds
CO <sub>2</sub>	Carbon dioxide
CSO	Civil society organization
CSP	Concentrated Solar Power
CTF	Clean Technology Fund
DGM	Dedicated Grant Mechanism for Indigenous Peoples and Local Communities
DR Congo	Democratic Republic of Congo
EBRD	European Bank for Reconstruction and Development
ECOSOC	UN Economic and Social Council
EE	Energy Efficiency
EU	European Union
FCPF	Forest Carbon Partnership Facility
FIP	Forest Investment Program
GDP	Gross domestic product
GEF	Global Environment Facility
GHG	Greenhouse gas
GW	Gigawatt
HCS	Hydro-meteorological and climate services
IDB	Inter-American Development Bank
IFC	International Finance Corporation (WBG)
IP	Investment plan
IWRM	Integrated water resources management
LAC	Latin American and Caribbean
Lao PDR	Lao People's Democratic Republic
MASEN	Moroccan Agency for Solar Energy
MDB	Multilateral Development Bank
MENA	Middle East and North Africa Region
MW	Megawatt
M&E	Monitoring and evaluation
NAPA	National Adaptation Program of Action
NMHS	National meteorological and hydrological services
NGO	Non-governmental organization
PPCR	Pilot Program for Climate Resilience
PPP	Public-private partnership
RE	Renewable Energy
REDD	Reducing Emissions from Deforestation and Forest Degradation
REDD+	REDD plus enhancing forest carbon stocks
RWSSI	Rural Water Supply and Sanitation Initiative (AfDB)
SCF	Strategic Climate Fund
SME	Small and medium enterprise

DRAFT 2012 CIF ANNUAL REPORT 5 DECEMBER 2012

SPCR	Strategic program for climate resilience
SREP	Program for Scaling Up Renewable Energy in Low Income Countries
SVG	St. Vincent and the Grenadines
UK	United Kingdom
UN	United Nations
UNDP	UN Development Programme
UNEP	UN Environment Programme
UNFCCC	UN Framework Convention on Climate Change
UNPFII	UN Permanent Forum for Indigenous Issues
UN-REDD	UN Collaborative Program on Reducing Emissions from Deforestation and Forest Degradation in Developing Countries
US	United States of America
WBG	World Bank Group
€	European Union Euro
\$	United States Dollar

## BOXES AND FIGURES

---

Box 1. \$271 in new donor support demonstrates confidence in the CIF mission

Box 2. Over 70 additional countries requesting CIF support

Box 3. Stakeholders enhance self-selection process to deepen observer participation in the board room  
and on the ground

Box 4. CTF at a glance

Box 5. PPCR at a glance

Box 6: FIP at a glance

Box 7. FIP pilot countries prepare to launch the Dedicated Grant Mechanism

Box 8. SREP at a glance

Box 9. Lessons learned in revising CIF results frameworks

Box 10: Knowledge Bazaar showcases CIF learning

Box 11. CIF learning library continues to grow

Box 12. Financing instruments available from international MDBs in combination with the CIF

Box 13. Enabling transformational change where it is most needed

Box 14. Climate change champions empower Zambia's climate resilience

Box 15. Effects of climate change and variability on plants in low latitudes

Box 16. Incorporating climate resilience into the energy sector in Tajikistan

Box 17. Snapshot of PPCR private sector project pipeline

Box 18. How knowledge on climate risk can help businesses create adaptation responses

---

Figure 1. CTF financing by technology, in \$ million

Figure 2. CO<sub>2</sub> emissions reduction of CTF approved projects

Figure 3. PPCR financing by project category, in \$ million

Figure 4. SREP financing by technology, in MW installed renewable energy capacity

Figure 5. Map of potential policy-relevant tipping elements in the climate system

Figure 6. Illustrative overview of PPCR pilot countries' hydromet-related projects and activities

Figure 7. Water, food, and energy security nexus

Figure 8. PPCR agricultural investments categories

Figure 9. Assessing adaptation needs and options: Six sets of activities and 20 steps from ADB

## CREATING THE CLIMATE FOR CHANGE

---

We are in a race against time as governments and communities fight their respective battles against the effects of climate change and variability. Efforts to ensure a sustainable life on earth continue to evolve at the local and national level in countries around the world, especially the poorest. The \$7.2 billion Climate Investment Funds (CIF) support those developing countries that are charging ahead on national and regional planning with a range of stakeholders and neighbors, by offering a unique combination of climate protection and development opportunity. They are investing in the transformation of economies that will equip poorer communities for a climate-stressed world.

During 2012, the CIF's fourth year, we are beginning to see the impact of the CIF's triple focus on programmatic planning to embed climate-smart action in national development and poverty reduction plans, innovative investments in tested but young climate approaches and technologies, and emphasis on partnerships and multi-stakeholder engagement. Four years of planning and preparation in 48 countries translate into the programming of more than \$6 billion worth of CIF financing. To date, 58 projects are underway in renewable energy, energy efficiency, clean transport, sustainable management of forests, and climate resilience.

The CIF is designed to scale up both financing and the knowledge base, and with the past year of operational efforts under our belts, we can begin to document, measure, and share the ways in which countries are using CIF funding to do that, and where the challenges remain.

The 2012 CIF Annual Report reflects on how CIF support is *creating the climate for change* by enabling pilot countries' work, and gives particular focus to the role of resilience as the cutting—and cross-cutting—edge of development. The report, a joint effort by the CIF partner MDBs and incorporating the direct views of CIF-funded countries, is designed to give you a chance to look through the four CIF windows into an emerging climate-smart future. We hope that you will find it informative and even inspiring.

Patricia Bliss-Guest  
Manager, CIF Administrative Unit

# THE CIF

## \$7.2 BILLION TO SPUR CLIMATE RESILIENT, LOW CARBON DEVELOPMENT

The Climate Investment Funds (CIF) give developing countries an urgently needed jump-start to mitigate and manage the challenges of climate change. Strong climate outcomes contribute to strong development outcomes in CIF programs and projects.

CIF pilot countries and regions, covering 48 countries worldwide, are tapping CIF resources to implement innovative, country-led strategies for clean technology, sustainable management of forests, increased energy access through renewable energy, and climate-resilient development.

Delivered through four windows, CIF financing includes grants, concessional funds, and risk mitigation instruments that leverage significant financing from governments, the private sector, multilateral development banks (MDBs), and other sources. Five MDBs—the African Development Bank (AfDB), Asian Development Bank (ADB), European Bank for Reconstruction and Development (EBRD), Inter-American Development Bank (IDB), and World Bank Group (WBG), including International Finance Corporation (IFC)—implement CIF-funded projects and programs.

At the country level, governments work with the MDBs and other development partners including civil society and the private sector to aggregate knowledge and expertise; spur innovation, learning and sharing of ideas; and encourage equitable, high impact use of CIF resources.

Climate Investment Funds (CIF) \$ 7.2 billion <sup>1</sup>			
Clean Technology Fund (CTF) \$4.98 B	Pilot Program for Climate Resilience (PPCR) \$1.2 B	Forest Investment Program (FIP) \$639 M	Program for Scaling Up Renewable Energy in Low Income Countries (SREP) \$410 M
High ambition, scaled-up demonstration, deployment, and transfer of low carbon technologies in renewable energy,	Mainstream resilience in development planning and action	Reduce emissions from deforestation and forest degradation, sustainably manage forests and enhance	Demonstrate economic, social, and environmental viability of low carbon development in low

<sup>1</sup> Fund pledges in this document are based on exchange rates on the initial CIF pledging date of September 25, 2008.



DRAFT 2012 CIF ANNUAL REPORT 5 DECEMBER 2012

energy efficiency, clean transport		forest carbon stocks	income countries' energy sectors
16 CTF investment plans: Chile, Colombia, Egypt, India, Indonesia, Kazakhstan, Mexico, Morocco, Nigeria, Philippines, South Africa, Thailand, Turkey, Ukraine, Vietnam, and the Middle East and North Africa Region (Algeria, Egypt, Jordan, Morocco, Tunisia)	11 PPCR pilots: Bangladesh, Bolivia, Cambodia, Mozambique, Nepal, Niger, Tajikistan, Yemen, Zambia, and the Caribbean Region (Dominica, Grenada, Haiti, Jamaica, St. Lucia, St. Vincent and the Grenadines) and Pacific Region (Papua New Guinea, Samoa, Tonga)	8 FIP pilots: Brazil, Burkina Faso, DR Congo, Ghana, Indonesia, Lao PDR, Mexico, Peru	7 SREP pilots: Ethiopia, Honduras, Kenya, Maldives, Mali, Nepal, Tanzania
Strategic Climate Fund (SCF) \$2.2 billion <sup>2</sup>			

+ for electronic version: embed video:

[http://www.kaltura.com/index.php/kwidget/cache\\_st/1351278777/wid/\\_619672/uiconf\\_id/4909271/entry\\_id/1\\_077hlsqt](http://www.kaltura.com/index.php/kwidget/cache_st/1351278777/wid/_619672/uiconf_id/4909271/entry_id/1_077hlsqt)

<sup>2</sup> For governance and funding purposes, PPCR, FIP, and SREP are arranged under the Strategic Climate Fund.

2 page spread

## CIF IN NUMBERS

### FUNDS BEING ALLOCATED AND READY FOR ACTION<sup>3</sup>

**CIF countries by region:** Stylized world map depicting spread: 27% Latin America & the Caribbean, 33% Africa, 8% Europe & Central Asia, 4% Middle East, 27% Asia & the Pacific

**Funding distribution by region:** 4 graphics by fund:

Fund	Middle East %	Africa %	Asia & the Pacific %	Europe & Central Asia %	Latin America & the Caribbean %
CTF	6	33	28	17	17
PPCR	6	17	33	6	39
FIP	0	38	25	0	38
SREP	0	57	29	0	14

Depict graphically: \$7.2 billion = CIF (\$4.98 billion = CTF, \$1.2 billion = PPCR, \$639 million = FIP, \$410 million = SREP)

\$6 billion = CIF financing allocated

\$ 216.3 million = CIF financing disbursed

\$1.5 billion = Projected 2013 CIF financing disbursement [graphic depiction of forecasted allocation, pin pointing actual as of Dec 31 and 2013 projection]

200 = CIF projects in the pipeline

58 = CIF projects approved (CTF= 38, PPCR = 17, FIP = 2, SREP= 1)

\$35.5 million = CIF project preparation grants to speed action

\$43 billion = Estimated co-financing leveraged by the CIF from other sources<sup>4</sup>

1:7.2 CIF financial leverage

1:8.2 CTF financial leverage

1:1.6 PPCR financial leverage

<sup>3</sup> All *CIF in Number* statistics are as of December 31, 2012

<sup>4</sup> Does not include co-financing for India's \$100 million development policy loan (DPL), which is to be determined at a later stage.

DRAFT 2012 CIF ANNUAL REPORT 5 DECEMBER 2012

1:3.5 FIP financial leverage

1:8.1 SREP financial leverage

1.7 billion tons = CO<sub>2</sub> emissions savings supported by the CTF

580 MW = Renewable energy capacity supported by the SREP

48 = CIF pilot countries

14 = CIF contributor countries

70+ = Additional countries expressing interest in the CIF

## 2012

### INVESTMENT PLANNING GIVING WAY TO ON-THE-GROUND IMPLEMENTATION

---

#### PLANNING PAYS OFF AS PROJECTS BEGIN TO TAKE OFF

In its fourth year, the CIF has seen a shift in activity. The tremendous amount of time and effort—put in by governments, MDBs, development partners, and stakeholders across civil society, local communities, and the private sector in all 48 CIF pilot countries—to craft strategic, multi-dimensional investment plans is beginning to pay off as many countries begin active implementation of their CIF-backed programs. A total of 58 projects are now underway in renewable energy, energy efficiency, clean transport, sustainable forest management, and climate resilience. From January 1 to December 31, 2012, the CIF has achieved advancements in:

**The Clean Technology Fund (CTF):** The CTF governing body endorsed the investment plan of Chile, meaning all 16 CTF investment plans are ready for implementation, with many already being launched. Thirty eight projects have been approved for \$2.2 billion in CTF funding, leveraging \$18 billion in co-financing and contributing to 537 million tons.CO<sub>2</sub> emissions savings.

**The Pilot Program for Climate Resilience (PPCR):** Strategic programs for climate resilience under the PPCR were endorsed for Dominica, Papua New Guinea, Tonga, Yemen, the Caribbean region, and the Pacific region bringing the total number of endorsed programs to 19 out of 20. In these plans, the PPCR has approved 17 projects for \$288 million in PPCR funding with total projected investments of \$327 million.

**The Forest Investment Program (FIP):** Investment plans for seven of eight pilot countries have been prepared and endorsed for a total of \$370 million in FIP funding. The FIP has approved two projects, both in Mexico, for a total of \$57 million in FIP financing with total projected investments of \$703 million. Preparations are underway to activate the Dedicated Grant Mechanism (DGM) for Indigenous Peoples and Local Communities, which will support these groups' participation in activities that reduce deforestation and forest degradation (see Box 6).

**The Program for Scaling Up Renewable Energy in Low-Income Countries (SREP):** Investment plans have been endorsed for six of seven pilot countries. Tanzania was accepted as the seventh SREP pilot country, and funding has been made available to prepare investment plans in Armenia, Liberia, Mongolia, Yemen, and the Pacific region. The SREP has approved three projects in Kenya, Nepal,

and Honduras for \$46 million, which is expected to leverage an additional \$572 million in co-financing and contribute to 250 MW in total renewable energy capacity development.

## ENHANCING COMMITMENTS TO DELIVER THE PROMISE OF THE CIF

In 2012, CIF partners and stakeholders continued the work of enhancing early design efforts to fully bring to life the principles on which the CIF was built and ensure that the CIF delivers on its promise of:

- Transparent and equitable governance
- Focus on climate-smart development
- Flexible financing products that work for developing countries
- Fully stakeholder-owned process
- Learning by doing and knowledge sharing

### Box 1. \$271 in new donor support demonstrates confidence in the CIF mission

In 2012, Canada (\$193 million), the United Kingdom (\$47 million), Sweden (\$25 million), and Switzerland (\$6 million) added to their original 2008 pledges, raising the level of overall CIF funding to more than \$7.2 billion from 14 contributors: Australia, Canada, Denmark, France, Germany, Japan, Republic of Korea, Netherlands, Norway, Spain, Sweden, Switzerland, United Kingdom, and United States.

The 2011 Annual Report of the CIF identified seven operational areas that the CIF committed to improving, and in 2012, *action was taken on*:

#### 1. **Strengthening country ownership by supporting stakeholder collaboration**

The CIF put in place [new plans](#)<sup>5</sup> to ensure more effective participation at the country level, clarifying the roles of countries, MDB partners, and stakeholder groups to take this engagement forward. Measures include:

- Engaging a broad range of stakeholders in regular fora to review progress against the CIF results framework, learn from experience, identify areas where better coordination is required to maximize synergies, and keep the programmatic focus on track
- Consistently using pilot country meetings to share lessons on country coordination
- Sensitizing development partner country teams to CIF collaboration
- Working with countries to distill and share country coordination and other relevant

<sup>5</sup> Enhancing Country Coordination Mechanisms, MDB Collaboration and Stakeholder Engagement In CIF Programs, CTF-SCF/TFC.8/5, April 16, 2012.

lessons learned

- Implementing principles of collaboration between MDBs

**2. Engaging the private sector *by assessing and reaffirming CIF financial products***

The CIF undertook a stock-taking of financial products and mechanisms as part of a larger effort to explore new instruments to engage the private sector. The exercise has led to a recommitment to support riskier financial instruments, including equity and quasi-equity, to ensure the full range of CIF financing tools is being utilized and to increase the share of CIF financing to private sector investments, particularly in the PPCR, FIP, and SREP.

***...by establishing a competitive reserve fund***

To encourage innovative approaches to engaging the private sector in pilot countries, the CIF governing bodies approved setting aside explicit allocations—\$46 million for the PPCR, \$56 million for the FIP, and \$90 million for the SREP—to support private sector clients working through an MDB’s private sector arm and public sector entities working through the MDB public sector arms that would, in turn, channel all funds to private sector recipients in the pilot countries. Procedural details are being finalized for launch in 2013 (see page \_\_\_).

**3. Strengthening communications *by launching knowledge management and communication efforts***

To fulfill the CIF mandate to invest in knowledge, as well as financing, a knowledge management program is underway to build new tools for each CIF program at the global and country levels. Work continues to ensure that knowledge products and approaches are demand-driven by countries for countries and can be replicated and scaled up to expand reach (see page \_\_\_). As a complementary effort, a [communications strategy](#) was developed to highlight CIF activities, reflect stakeholder perspectives, and convey emerging lessons to encourage national, regional, and global replication of CIF activities.

**4. Measuring development impacts *by strengthening CIF results management frameworks***

Revised results management frameworks were approved for the CTF, PPCR, and SREP, taking into account early experience to refine indicators, structures, and harmonization plans among programs and implementing agencies. Core indicators were established for each program, and will be translated into the respective CTF, PPCR, and SREP results frameworks and measured by all pilot and partner countries. This will enable the CIF to report back on achievements of investments at the country level, fund level, and over time. (see page \_\_\_).

**5. Ensuring good governance and transparency *by limiting executive sessions***

To better accommodate the important contributions of active observers on the CIF governing bodies, a decision was taken to limit the executive sessions originally embedded in the governance design. Discussions on investment plans now include the voice of beneficiaries, non-governmental stakeholders, and other interested parties to help ensure informed decision-making.

***...by enhancing the CIF observer self-selection processes to improve participation***

Key stakeholder groups organized more systematic approaches to selecting their observers to the CIF governing bodies, improving on timing, criteria, selection process, and use of consultant support. As a result, stakeholders' engagement at committee meetings, as well as their corresponding discourse with constituents back home, are helping to deepen understanding of CIF contributions and increasing the capacity for informed stakeholder involvement at the country level (see page \_\_\_).

***...by setting high standards on disclosure***

The CIF's robust disclosure policy requires that committee documents, governance frameworks, project proposals, and other documents be posted publicly on the CIF website. Additionally, the CIF is taking steps towards achieving full IATI compliance.

**6. Enhancing operational performance by assessing effectiveness**

Work began on [the independent evaluation of the CIF](#), led by an Evaluation Oversight Committee composed of specialists from the independent evaluation arms of the MDBs with advice from an International Reference Group of outside experts. The evaluation, which is expected to be completed in 2013, will assess the development effectiveness and the organizational effectiveness of the CIF to date, and document experiences and lessons for the benefit of future climate finance instruments, including the Green Climate Fund.

**7. Mainstreaming gender considerations by identifying key areas of improvement**

While the MDBs provide gender disaggregated indicators for projects where feasible, the CIF commissioned the Global Gender Office of the International Union for Conservation of Nature to produce a [Gender Review of the CIF](#), providing concrete recommendations and practical tools to help pilot countries and project teams better integrate gender into their work moving forward. The CIF Administrative Unit and pilot countries are using this report to develop new strategies for implementation in 2013.

**Box 2. Over 70 additional countries requesting CIF support**

Ever ambitious and future-focused, CIF pilot countries are submitting investment plans that require funding beyond available CIF resources, and are requesting additional support. Other non-CIF pilot countries are also requesting resources from the CIF; over 70 have expressed interest. Without additional pledges, the CIF will be constrained in programming for new recipients. The welcomed interest shows a need for climate finance from the CIF and other sources.

Off set this content graphically

**Box 3. Stakeholders enhance self-selection process to deepen observer participation in the board room and on the ground**

A hallmark of CIF transparency is its stakeholders' participation in CIF governance. To keep this process alive and strong, the CIF has continuously looked to strengthen stakeholders' engagement so that they can help advance the CIF's purpose and goals.

In 2012, three main stakeholder groups—civil society organizations (CSO), the private sector, and Indigenous Peoples—finalized refined processes of self-selection, participation, and contribution to CIF governance, drawing on feedback from an extensive [review of past processes](#). Each group carried out its own [customized process](#) to select representatives to serve as CIF observers for the 2012-14 term (See Annex D, Observers). Orientation programs were held to prepare new observers for participation in the May and November 2012 CIF Trust Fund Committee and Sub-Committee Meetings. Observers also met at the first-ever [CIF 2012 Civil Society Forum](#) organized by the CIF civil society observers in conjunction with the 2012 Partnership Forum in Istanbul, Turkey to explore ways and means to enhance CSOs engagement at the program and project level (see page 41).

All CSO, private sector, and Indigenous Peoples observers play an active role in the CIF meetings by presenting their constituencies' views and providing expert advice. One critical aspect of their responsibility is to share the CIF committees' actions with their various constituencies, a challenging task for diverse and global sets of constituents. One means by which the observer group solidified this process in 2012 was by producing their own joint summary report, which they issued parallel to the official summary following the May and November meetings. Each observer group then circulated their hand-crafted summary to their constituencies to enlarge their constituencies' knowledge and understanding of CIF policies and actions.

Observer quote options (depending on space)

“CSO observers’ active involvement in the CIF process has a strong potential for contributing to building consensus, as well as to identifying and addressing key issues for investment plans’ approval, implementation, and follow up.”

Sergio Sanchez, Instituto de Aire Limpio, Mexico  
CSO observer to CTF

“The opportunity to be an observer in the CIF has enhanced my work with the national government. The government has increased their openness and recognized the work of CSOs.”

Khamla Soubandith, Community Knowledge Support Association, Lao PDR

**Comment [LA1]:** + Electronic version link to additional content in electronic version (in box below)



Indigenous Peoples observer to FIP

“Business is part of the solution to both mitigation of and adaptation to climate change. The CIF is an excellent platform for promoting and developing public-private partnerships to achieve solutions for the transition towards a ‘green’ and inclusive economy.”

Andrea Bacher, International Chamber of Commerce, France

Private sector observer to SCF, PPCR

“CIF meetings have helped me in connecting with reputed professionals from national and international communities and it provided an opportunity to share experiences, reduce isolation, and improve morale. These types of meeting are very effective of upgrading activities of SREP.”

Padam Hamal, Neighbour Organization, Nepal, CSO observer to SREP

**+** *Additional content for electronic version*

**CIF Observer Groups Enhance Self-Section Process**

**Civil Society Observers**

Working through RESOLVE, a non-governmental organization dedicated to building collaborative solutions to environmental, social, and health challenges, over 6,000 CSOs were contacted to identify potential CSO observer candidates to the CIF. This process generated applications from 230 organizations, from which a short-list of candidates was developed based on specific selection criteria identified by the outgoing observer group. An Advisory Committee, composed of independent organizations with expertise in climate change mitigation and adaptation, weighed in followed by a three-week electronic voting process. The selected candidates took their seats for the first time during the May 2012 CIF Trust Fund Committee and Sub-Committee meetings.

**Private Sector Observers**

Working through Business for Social Responsibility (BSR), an organization with a global network of nearly 300 member companies working to build a just and sustainable world, 240 organizations in 96 countries were contacted and applications were received from 26 organizations. BSR and a Steering Committee narrowed the list to 17, and after extensive public consultations, eight private sector observers were selected. They sat at the governance table for the first time in the May 2012 meetings.

**Indigenous Peoples Observers**

The Indigenous Peoples observers were selected through the UN Permanent Forum on Indigenous Issues (UNPFII), an advisory body to the UN Economic and Social Council (ECOSOC) with a mandate to discuss indigenous issues related to economic and social development, culture, the environment, education, health and human rights. The Forum designated regional caucuses in Africa, Asia, Latin

DRAFT 2012 CIF ANNUAL REPORT 5 DECEMBER 2012

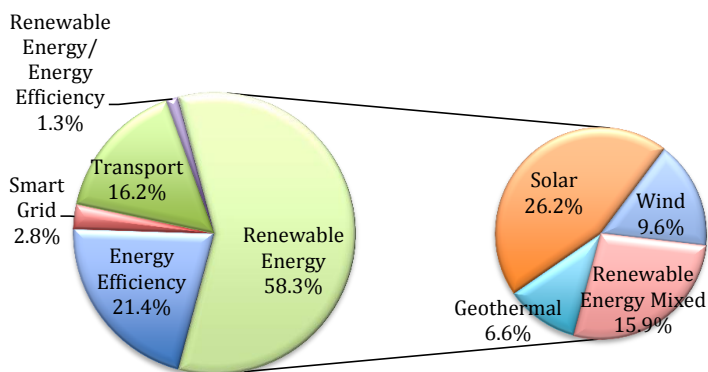
America, Oceania and Pacific to nominate their representatives to the CIF. The regional caucuses nominated nine Indigenous Peoples observers through a regional self-selection process, which was finalized in May 2012. The Indigenous Peoples observers participated in the November 2012 meetings.

## CLEAN TECHNOLOGY FUND (CTF)

*\$2.2 billion approved, expected to leverage \$18 billion in co-financing and contribute toward 537 tons of CO<sub>2</sub> emissions*

Clean technologies can help solve pressing environmental and socio-economic problems by reducing pollution, expanding energy options and access, and stimulating new markets and job growth. With pledges totaling \$4.98 billion, the CTF provides middle income countries with resources to explore options to scale up the demonstration, deployment, and transfer of low carbon, clean technologies. Each CTF investment plan is tailored by the country to be integrated into national development objectives. Over 100 projects have emerged from these plans and are expected to have a major impact both on reducing CO<sub>2</sub> emissions—an estimated 1.7 billion tons—and on strengthening the viability and availability of clean technologies nationally, regionally, and globally.

Figure 1. CTF financing by technology, in \$ million



In 2012, the CTF endorsed the investment plan for Chile. Along with India and Nigeria, Chile received a first tranche of requested funding in August 2012, but an additional \$809 million must be mobilized to fully realize these three plans. This brings the total number of CTF endorsed investment plans to 16, with 15 country plans and the Middle East and North Africa regional plan. To date, the CTF has approved \$2.2 billion in funding for 38 projects under 14 investment plans. The amount is expected to leverage \$18.2 billion in co-financing from governments, MDBs, and other sources, with nearly a third funded by private sector money.

Figure 2. CO<sub>2</sub> Emissions Reduction of CTF Approved Projects (as of December 31, 2012)

[Insert chart and listing from co2 emissions reduction ctf projects.xls]

**BOX 4. CTF at a glance**

**Funding**

\$4.98 billion pledged as of December 31, 2012

**Financial leverage**

1:8.2

**Implementation**

AfDB, ADB, EBRD, IDB, and WBG, including IFC

**Governance**

CTF Trust Fund Committee on which contributor and recipient countries are equally represented

**Observers**

MDBs, Trustee, Global Environment Facility (GEF), United Nations Development Programme (UNDP), UN Environment Programme (UNEP), UN Framework Convention on Climate Change (UNFCCC), European Investment Bank, and self-selected representatives of civil society organizations, indigenous peoples, and the private sector

**Financing**

Concessional financing, such as grants and concessional loans; risk mitigation instruments, such as guarantees; equity; technical assistance through grants

**Country eligibility**

Countries eligible for official development assistance and MDB assistance

**Endorsed investment plans**

Chile, Colombia, Egypt, India, Indonesia, Kazakhstan, Mexico, Morocco, Nigeria, Philippines, South Africa, Thailand, Turkey, Ukraine, Vietnam, and the Middle East and North Africa Region (Algeria, Egypt, Jordan, Morocco, Tunisia). Chile, India, and Nigeria have commenced investments in part while they await availability of full funding.

**Approved projects**

The CTF has approved 38 projects under 14 investment plans for \$2.2 billion in CTF funding. Initiatives cover electricity generation from renewable energy sources, including concentrated solar power, wind, geothermal, and small-scale hydro power; energy efficiency and conservation; energy transmission and distribution; and urban transport.

**Private sector innovation and investment can speed transformation**

Private capital, expertise, and commercial discipline can make a big difference in implementing clean technology strategies. Approximately 37 percent of all CTF financing is intended for private sector projects to be disbursed directly to real sector companies or through financial intermediaries to ensure fast scale up of energy efficiency and renewable energy investments in national markets.

The CIF aims to leverage public funding with resources from other investors. In the case of CTF, a goal of private sector projects administered through the private sector arms of MDBs is to leverage CTF funding with private finance. While this is not the explicit mandate of the public sector CTF projects, they too have been effective at using CTF resources to catalyze private sector investment: \$1 dollar of CTF funding drawing in an additional \$3.6 dollars of private finance.

Governments are recognizing that a combination of appropriate public sector policies and private sector action can achieve sweeping change in climate-resilient development that reduces the output of CO<sub>2</sub> emissions. In particular, public-private partnerships (PPP) are emerging as a successful business model within the CTF to create scale and mobilize necessary funding.

**Call out:**

CTF public investment projects can help attract private investment by:

1. Tailoring regulatory and policy environments
2. Investing in complementary infrastructure
3. Reducing risk and increasing “comfort” for private investors

### Highlights from the CTF Portfolio

#### Turkey transitioning to clean energy through longer term lending

Turkey is applying \$100 million from the CTF to a project to support Turkish financial intermediaries as they work to extend longer term finance to privately-owned and operated energy efficiency and renewable energy initiatives, particularly in geothermal, small hydropower, and wind power. Medium and long term lending to the private sector has traditionally been limited due to the short maturity of Turkish banks’ funding base. But the Turkish government’s push to capture the potential of renewable energy sources—an estimated 48,000 MW wind and 600 MW geothermal power—is creating opportunities for new lines of credit. The project is helping accelerate Turkey’s transition to clean energy alternatives, spurring private sector involvement, and ensuring greater energy security while saving nearly 20 MtCO<sub>2</sub>e over the 20-year lifespan of investments financed by the project.



▶ Embed in electronic version: WB video on CTF Turkey

[http://lnweb90.worldbank.org/ecaim/multimedialib.nsf/svdo/76F11227D6203FF885257A3F0054632C?](http://lnweb90.worldbank.org/ecaim/multimedialib.nsf/svdo/76F11227D6203FF885257A3F0054632C?Opendocument)

[Opendocument](#)

**Morocco first to advance MENA region concentrated solar power program**

Morocco is home to [Ouarzazate I](#), the first project to be approved under the Middle East and North Africa region’s program to develop 1 GW of concentrated solar power (CSP) generation capacity and advance Morocco’s own Integrated Solar Plan, which aims to achieve 2,000 MW solar power capacity and expand industrial integration and skills development by 2020. Morocco is using \$197 million from the CTF to support the CSP complex at Ouarzazate, which targets 120-160 MW generation capacity in its first phase by 2014 and 500 MW in total, making it the largest CSP plant in world. Structured as a public private partnership (PPP) between the Moroccan Agency for Solar Energy (MASEN) and a private partner, the project has benefited from strong market competition during the bidding cycle, which has resulted in a generation cost of \$0.188/kWh, much less than originally estimated in the project design. Ouarzazate I will also help Morocco bolster domestic green energy industries and avoid 240,000 tons of CO<sub>2</sub> emissions a year—the same as removing 80,000 cars from the road annually.

**Call out**

“CIF funds have been able to mobilize a bigger pool of liquidity and, thus, make available larger amounts of funds permitting a higher leverage for a longer tenor and at a lower risk premium. The proof of the value created can be seen in the tariff that we have been able to deliver.”

Paddy Padmanathan, President and CEO, International Company for Water and Power Projects (ACWA Power, Saudi Arabia), private partner on Ouarzazate I, during CIF 2012 Private Sector Forum

**Ukraine demonstrating commercial viability of wind power**

Ukraine is considered one of the world’s largest emitters of GHG, but CTF financing of \$350 million is supporting Ukraine’s effort to change this record and invest in new renewable energy capacity, waste heat generation, transmission grid upgrades, and energy efficiency. In 2012, [a 32.5 MW expansion of the 20 MW Novoazovskiy Wind Park](#) was completed with \$20.6 million in CTF support. In addition to avoiding 2.12 MtCO<sub>2</sub>e over the project’s 20-year lifetime, CTF financing has helped to reduce the overall cost and risk of the project. By demonstrating the commercial viability of low-carbon investments in Ukraine’s carbon-intensive economy, CTF financing aims to accelerate scaled-up private sector investments in Ukraine’s renewable energy potential. With the owners of the Novoazovskiy Wind Park now planning to add an additional 50 MW wind capacity by 2014, early results are promising.

**TransCebu to offer cleaner, faster, more reliable transport**

In the Philippines, heavy traffic and overcrowded, underequipped mass transit systems typify its major cities, including second largest Cebu City where 75 percent of the population uses public transportation, especially the iconic but slow and polluting jeepney. CTF financing of \$25 million will support construction of a 17 km bus rapid transit system in the heart of Cebu City—[TransCebu](#)—featuring dedicated travel lanes and a fleet of 180 modern, air-conditioned buses, powered by Euro IV ultra clean diesel engines. At just over 13 meters long with a maximum capacity of 95 passengers, the

DRAFT 2012 CIF ANNUAL REPORT 5 DECEMBER 2012

buses will provide faster, cleaner and more reliable transport at an affordable fare. GHG emissions savings are expected to be around 3.8 million tons of CO<sub>2</sub> over a 20 year period. Complementing the bus service will be an area traffic control system to improve citywide traffic signals operation, manage traffic along the TransCebu route, and enhance public spaces. Expected to begin operation in 2015, TransCebu is a system that could be expanded across the entire metropolitan area.

## PILOT PROGRAM FOR CLIMATE RESILIENCE (PPCR)

*\$288 million approved, expected to leverage \$327 million in co-financing*

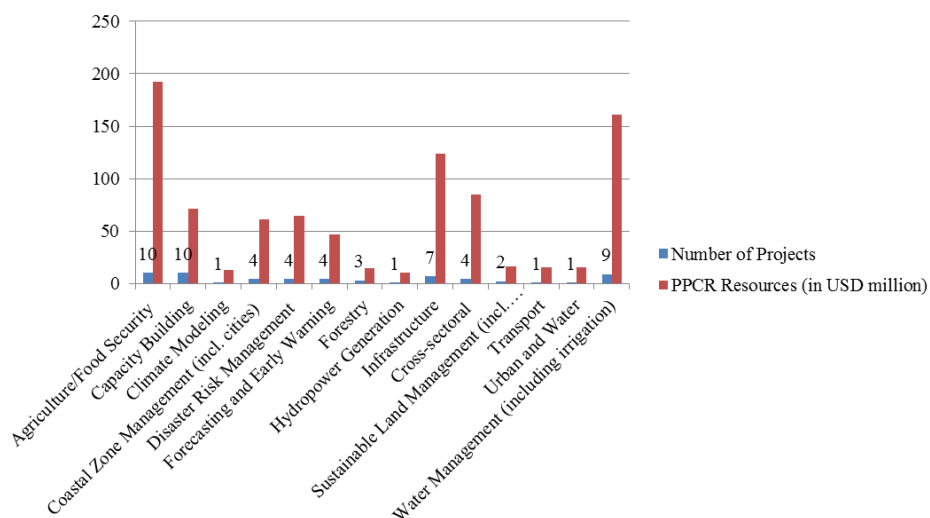
Resilient communities and businesses can anticipate potential shocks and disruptions from climate variability and change, including natural disasters. When weather extremes do hit, they are better able to minimize the losses, protecting human life, property, and livelihoods. Particularly for the world’s poorest countries, managing the effects of climate change is a multi-sector, multi-dimensional concern that is central to effective poverty reduction, economic growth, and sustainable development.

The PPCR helps developing countries integrate climate resilience into development planning and offers additional funding to support public and private sector investments for implementation. Building on national development programs and plans, the PPCR provides incentives to pilot new approaches, as well as scale-up proven action, to catalyze a shift to broad-based strategies for achieving climate resilience at the national level.

Giving priority to highly vulnerable least developed countries, including the small island developing states, the PPCR is providing grants and highly concessional financing (near-zero interest credits with a grant element of 75 percent) for investments that fall in several categories (see Figure 3).

In 2012, the PPCR approved strategic programs for climate resilience for Dominica, Papua New Guinea, Tonga, Yemen, the Caribbean region, and the Pacific region bringing the number of endorsed programs to 19 out of a total of 20. To date, the PPCR has approved 17 projects within these endorsed programs for \$288 million in PPCR funding with total projected investments of \$327 million.

Figure 3. PPCR financing by project category, in \$ million





**Box 5. PPCR at a glance**

**Funding**

\$1.2 billion pledged as of December 31, 2012

**Financial leverage**

1:1.6

**Implementation**

AfDB, ADB, EBRD, IDB, and WBG, including IFC

**Governance**

PPCR Subcommittee with representatives from six contributors and six eligible recipient countries and a high-level representative of the Adaptation Fund Board

**Observers**

MDBs, Trustee, GEF, UNDP, UNFCCC, and self-selected representatives of civil society organizations, indigenous peoples, and the private sector

**Country eligibility**

Countries eligible for official development assistance and MDB assistance with priority given to highly vulnerable least developed countries

**Pilots**

Bangladesh, Bolivia, Cambodia, Mozambique, Nepal, Niger, Tajikistan, Yemen, Zambia, the Caribbean region (Dominica, Grenada, Haiti, Jamaica, St. Lucia, St. Vincent and the Grenadines), the Pacific Region (Papua New Guinea, Samoa, Tonga), plus two regional efforts addressing the needs across the islands

**Endorsed strategic programs for climate resilience**

Bangladesh; Bolivia; Cambodia; Mozambique; Nepal; Niger; Tajikistan; Yemen; Zambia; Caribbean regional program and national programs in Dominica, Grenada, Jamaica, St. Lucia, St. Vincent and the Grenadines; Pacific regional program and national programs in Papua New Guinea, Samoa, and Tonga

**Approved projects**

The PPCR has approved 17 projects for \$288 million. These resources are expected to leverage another \$327 million in co-financing.

### Highlights from the PPCR Portfolio

#### Caribbean region to strengthen resilience through climate data sharing

Across the Caribbean, tropical storms and hurricanes bring heavy winds and rain that can ravage entire communities, destroying infrastructure, livelihoods, and lives. To improve territorial planning and preparedness, Caribbean island nations are working to improve access to regional climate information, sharing knowledge and best practices, and implementing disaster risk management practices. PPCR financing of over \$100 million is supporting six countries in the Caribbean—Dominica, Grenada, Haiti, Jamaica, Saint Lucia, and Saint Vincent and the Grenadines—as well as regional activities designed to facilitate information flow and allow for economies of scale to enhance efforts of island nations with resource constraints. Measures include improving geospatial data and adaptation planning, consolidating regional climate monitoring platforms, downscaling climate projection models and maps, and applying adaptation lessons to key sectors.

**Comment [L2]:** + Link to additional embedded content in electronic version (see box below)

#### Cambodia combats erosion of vulnerable provincial roads

Cambodia is putting \$17 million from the PPCR to work enhancing the resilience of rural roadways vital to communities in Prey Veng, Svay Rieng, Kampong Chhnang, and Kampong Speu Provinces. To combat erosion inflicted by extreme weather events, as well as gradual climatic changes, road embankments and roadside ditches will be designed using more moisture-resistant materials, while other engineering efforts will improve water conservation of the watershed and divert surface run-off away from roads. Community-based tree planting and water harvesting programs will support these measures, as will new engineering guidelines for road construction. A new national emergency management system in Kampong Chhnang Province will also be piloted to strengthen the country’s disaster preparedness and response.

*(For more on PPCR pilot countries, see feature section: The Imperative for Climate-Resilient Development in CIF Pilot Countries, page \_\_\_\_.)*

#### + Additional embedded content for electronic version:

Embed feature story “Regional Data Sharing for Caribbean Climate Resilience”:  
<https://climateinvestmentfunds.org/cif/content/regional-data-sharing-caribbean-climate-resilience>  
PPCR south-south knowledge exchanges deepen learning

## FOREST INVESTMENT PROGRAM (FIP)

*First \$57 million approved, expected to leverage \$703 million in co-financing*

Forests cover more than 30 percent of global land area, and play a critical role in helping the world to adapt to and mitigate the effects of climate change. But despite effort to protect them, forests and trees are being cut down and degraded, resulting in six billion tons of CO<sub>2</sub> being sent into the atmosphere annually. Deforestation and forest degradation constitute the second leading cause of global warming, accounting for nearly 20 percent of global greenhouse gas emissions.

The FIP supports developing country efforts to reduce deforestation and forest degradation and promote sustainable management of forests that leads to emissions reductions and enhancement of forest carbon stocks (REDD+). It finances large-scale investments and leverages additional resources, including from the private sector, to:

- Promote forest mitigation efforts, including protection of forest ecosystem services
- Provide support outside the forest sector to reduce pressure on forests
- Help countries strengthen institutional capacity, forest governance, and forest-related knowledge
- Mainstream climate resilience considerations and contribute to biodiversity conservation, protection of the rights of indigenous peoples and local communities, and poverty reduction through rural livelihoods enhancements
- Serve as a proving ground to test new and innovative financing approaches

FIP programs are designed to collaborate with and complement other REDD+ financing mechanisms such as the Forest Carbon Partnership Facility (FCPF), the Global Environment Facility (GEF), and the UN Collaborative Program on Reducing Emissions from Deforestation and Forest Degradation in Developing Countries (UN-REDD).

In 2012, the FIP approved two projects, both in Mexico, for \$57 million in FIP funding with total projected investments of \$703 million. To date, investment plans for seven of eight pilot countries have been prepared and endorsed with indicative allocations totaling \$320 million in FIP funding. Additionally, 17 grants totaling \$5 million have been allocated to help FIP pilot countries prepare investment plans and projects.

**Box 6: FIP at a glance**

**Funding**

\$639 million pledged as of December 31, 2011

**Financial leverage**

1: 3.5

**Implementation**

AfDB, ADB, IDB, and WBG, including IFC

**Governance**

FIP Subcommittee of representatives from six contributor and six eligible recipient countries

**Observers**

MDBs, Trustee, GEF, FCPF, UNFCCC, UN-REDD, and self-selected representatives of civil society, indigenous peoples, and the private sector

**Country eligibility**

Countries eligible for official development assistance and MDB assistance, with priority to countries expressing an interest to participate

**Pilots**

Brazil, Burkina Faso, DR Congo, Ghana, Indonesia, Lao PDR, Mexico, Peru

**Endorsed investment plans**

Brazil, Burkina Faso, DR Congo, Ghana, Indonesia, Lao PDR, Mexico

**Approved projects**

The FIP has approved Mexico's Forests and Climate Change Project and Financing Low Carbon Strategies in Forest Landscapes Project for a total of \$57 million, which is expected to leverage an additional \$703 million in co-financing.

**Highlights from the FIP Portfolio**

**Mexico pioneers effort to support and engage 4,000 forest communities**

Mexico is committed to curbing deforestation and forest degradation, and has adopted an ambitious program to manage its forests and trees in a sustainable manner, including its recently launched Forest and Climate Change Project. Supported by \$42 million from the FIP, this pioneering effort aims at improving the livelihoods of about 4,000 forest communities in Mexico through sustainable management of forest goods and services. Totalling \$392 million, 88 percent of project funding will go directly to small scale initiatives to be proposed, prepared and implemented by communities and *ejidos*, a collective ownership system unique to Mexico. The project will also fund studies, workshops and consultations related to forests and climate change in Mexico and contribute to international REDD+ efforts.



▶ Embed video FIP\_Interviews-16 in electronic version

“The FIP was a fantastic opportunity for us in terms of its timing and in terms of its character.”

Mr. Jose Carlos Fernandez Ugalde, Head of International Affairs and Financial Promotion, National Forestry Commission, Mexico

### **Brazil to transform land management in the Cerrado**

Brazil is embracing a landscape approach to achieve the triple win of mitigation, adaptation, and poverty reduction in the Cerrado, a vast mosaic of grasslands, savannahs, and evergreen tropical woodlands at the heart of the country’s territory. The second largest biome after the Amazon, the Cerrado is under constant threat of deforestation and rising CO2 emissions due to extensive tilling and cattle production. FIP backing of \$70 million will support efforts to curb the expansion of the agricultural frontier into native forests and reduce carbon emissions without sacrificing production levels of an industry that provides jobs and income to local communities and is a major contributor to the national GDP. Initiatives include environmental regularization of agriculture and land use, climate-friendly farming technologies and techniques, information systems to support public and private sector partners in forest and land management, and early warning systems for fire prevention and land protection.

#### **Call out**

The FIP aims to increase understanding of entire forest landscapes by looking across large, connected geographic areas to more fully recognize natural resource conditions and trends, natural and human influences, and opportunities for resource conservation, restoration, and development.

#### **Box 7. FIP pilot countries prepare to launch the Dedicated Grant Mechanism**

After a two-year consultative process, the Dedicated Grant Mechanism for Indigenous Peoples and Local Communities (DGM) has been established. This mechanism will provide additional finance to resources allocated under FIP investment plans, and aims to stimulate and extend participatory governance, transparency, and accountability in FIP pilot countries by providing Indigenous Peoples and local communities with the resources they need to meaningfully engage in REDD+ at the local, national, and international levels. The DGM will fund a range of activities, including:

-- Community capacity building for communications and outreach

- Small grants for integrating indigenous knowledge with technologies for adaptation and mitigation, technical assistance, monitoring, and learning
- Knowledge exchange and learning
- Building and strengthening networks and alliances
- Community-based monitoring
- On the ground activities, such as establishing community woodlots, tree nurseries, small-scale alternative energy solutions

Once the DGM sets these actions in motion, the experiences and lessons learned will be shared with other global partners in the REDD+ process, including 32 countries of the FCPF. Several FIP pilot countries have initiated national consultations to design their local DGM institutional arrangements with a mandate to ensure that Indigenous Peoples and local community representatives are at the heart of any final decision-making structure.

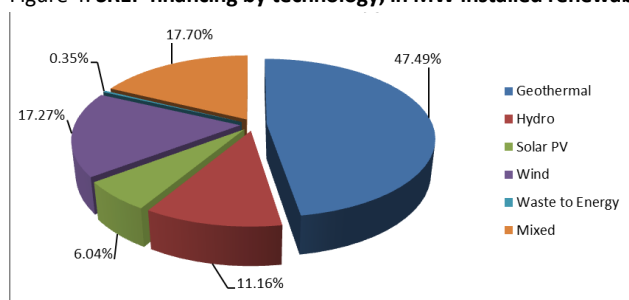
Ghana, for example, is using a bottom-up approach to build awareness and consult with community and civil society stakeholders before launching the DGM. A country where around 80 percent of land is communally owned, Ghana sees the DGM process as complementary to the investment planning process in that it can help build the capacity of local communities to support FIP investments, create consensus on and facilitate tenure and benefit-sharing arrangements, and strengthen the government's ongoing decentralization process.

## PROGRAM FOR SCALING UP RENEWABLE ENERGY IN LOW-INCOME COUNTRIES (SREP)

*First \$46 million approved, expected to leverage \$572 million in co-financing and support the development of 250 MW of renewable power*

More than 1.5 billion people in developing countries do not have access to electricity and other basic energy services. As developing countries strive to overcome poverty and advance economic growth, governments are recognizing that renewable energy can offer a new pattern of energy generation and use. The SREP supports the scale up of renewable energy solutions and expansion of renewable markets in low income countries worldwide.

Figure 4. SREP financing by technology, in MW installed renewable energy capacity \*



\* Based on endorsed SREP investment plans as of December 31, 2012

The SREP stimulates economic growth by working with governments to build renewable energy markets, engage the private sector, and target renewable energy technologies that allow for the generation and productive use of energy for households and businesses, as well as community services, such as health, education, and communications. By promoting both public and private sector actions, the SREP acts as a catalyst to remove barriers that might otherwise inhibit investments in renewable energy.

In 2012, the SREP endorsed investment plans from Ethiopia and the Maldives, bringing the total number of endorsed plans to six for \$240 million, which is expected to leverage \$ 1.8 billion in co-financing and support the development of 580 MW of renewable energy capacity. The SREP approved three projects in Kenya, Nepal, and Honduras for \$46 million, which is expected to leverage an additional \$572 million in co-financing and contribute to 250 MW of renewable energy capacity development. Tanzania was accepted as the seventh SREP pilot country, and funding has also been made available to prepare investment plans in Armenia, Liberia, Mongolia, Yemen, and the Pacific region.

**Box 8. SREP at a glance**

**Funding**

\$431 million pledged as of November 30, 2012

**Financial leverage**

1:8.1

**Implementation**

AfDB, ADB, IDB, WBG, including IFC

**Governance**

SREP Subcommittee of representatives from six contributor and six eligible recipient countries

**Observers**

MDBs, Trustee, GEF, UNDP, UNEP, and self-selected representatives of civil society, indigenous people, and the private sector

**Country eligibility**

Low income countries eligible for MDB concessional financing and engaged in an active MDB country program with priority to countries expressing an interest to participate

**Pilots**

Ethiopia, Honduras, Kenya, Maldives, Mali, Nepal, and Tanzania

Reserve SREP pilots: Armenia, Liberia, Mongolia, Yemen, and the Pacific region

**Endorsed investment plans**

Ethiopia, Honduras, Kenya, Maldives, Mali, and Nepal

**Approved projects**

The SREP has approved three projects in Kenya, Nepal, and Honduras for \$46 million, which is expected to leverage an additional \$572 million in co-financing and contribute to 250 MW of renewable energy capacity development.

**Highlights from the SREP Portfolio**

**Nepal increasing energy access through renewables and rural energy services**

Nepal is focusing \$40 million in SREP financing on initiatives to increase energy access through renewable energy technologies, address poverty reduction and gender inclusiveness, and ensure sustainable operations by implementing technical assistance and capacity building. SREP investments will finance on



and off-grid small hydro power and off-grid mini/micro energy initiatives, such as hydropower, solar photovoltaic, and biogas. It is estimated that these initiatives will enable the rapid takeoff of small hydro power projects, resulting in roughly 50 MW of additional capacity. In addition, 250,000 households will gain energy access through 30 MW of micro/mini hydro power, and another 500,000 households through solar home systems totaling 10 MW capacity.



► Embed video: Raju Laudari, Nepal - SREP Investment Plan\_medg

“We are heading to programmatic outputs, meaning we are planning to bring all stakeholders in one output so that we’ll have a broader renewable energy program in Nepal to meet the objective of the national plan.”

Raju Laudari, Alternative Energy Promotion Centre, Nepal

#### **Ethiopia expanding renewable energy generation and markets**

Ethiopia’s efforts to increase energy efficiency and diversify its energy mix through renewable energy are getting a \$50 million boost from the SREP. “Our SREP investment plan will help unlock Ethiopia’s renewable energy potential and share some of the risks. Funds will be applied to technology transfer to reduce the cost of wind energy and to initial drilling and exploration activities of geothermal,” stated Gosaye Mengistie Abayneh, Director of Energy Study and Development in the Ethiopian Ministry of Energy. Geothermal and wind power will help expand the energy supply at low costs and with limited environmental impacts by up to 75 MW and 100 MW respectively. SREP support will also go to establishing a capacity building and financing facility for small and medium energy enterprises in an effort to increase the local population’s access to renewable energy technologies by creating a solid supplier base.

## ADDRESSING PUBLIC AND PRIVATE INVESTOR RISKS

### *CIF Financial Instruments*

The CIF offers a range of financial instruments that provide flexible concessional financing to accommodate a range of risks encountered by both the public and private sectors. The MDBs, the CIF implementing agencies, can use one or more of these instruments to structure a financial package for a project they support, enabling them to blend their own resources for interventions that go beyond "business as usual," and mobilize financing from the private sector and other sources.

The CIF was founded on the principles of:

- Providing concessional funding for public and private sector investments with a concessionality element
- Allowing tools and instruments that match their delivery expectations and result in positive and catalytic change

The CIF offers a range of financial instruments tailored to address a range of different barriers for real and financial sectors: **loans, guarantees, equity, quasi-equity, mezzanine financing, convertible loans, and grants.**

Grants are offered under the CIF for technical assistance targeting the enabling environment, policy reform, and capacity building. Technical assistance is usually aligned with the investment side of a project and addresses market barriers.

The concessionality element is provided to offset risk premiums associated with a new technology, market risk, implementation risk, and other barriers. This usually makes an investment more viable and, de facto, incentivizes other investors and lenders to participate in a project. The CTF, for example, has been able to mobilize significant amounts of funding around its projects, achieving high leverage ratios.

#### **Expanding private sector engagement**

For the CIF, engaging the private sector is critical to stimulating markets, increasing investment potential, and enabling financial gain in climate-friendly enterprises and businesses. Usually engaged via the private sector arms of the MDBs, the CTF has also attracted private sector entities through:

- Investments undertaken by the public sector arms of the MDBs: 8 of 10 MDB-approved CTF public sector interventions have attracted private sector co-financing, varying from 12 percent in the Morocco CSP program to 78 percent in the Mexico renewable energy program
- Public-private partnerships (PPPs), such as the Ouarzazate I CSP plant in Morocco

Approximately 37 percent of CTF financing is focused on private sector investments being delivered directly to real sector companies, as well as through local financial intermediaries to allow fast scale up through the banks' portfolio of clients and integration of clean energy practices into mainstream market

and industries.

The CIF is looking at ways to enhance private sector engagement. In May 2012, the Joint CTF-SCF Trust Fund Committee expressed its [recommitment to support riskier financial instruments](#)<sup>6</sup>, including equity and quasi-equity, to ensure the full range of CIF financing tools is being utilized and to increase the share of CIF financing to private sector investments particularly in the PPCR, FIP, and SREP programs.

To further encourage innovative approaches to engaging the private sector in pilot countries, the Joint CTF-SCF Trust Fund Committee approved in November 2012 the establishment of a competitive reserve fund for the PPCR, FIP, and SREP. Explicit allocations will be set aside—\$46 million for the PPCR, \$56 million for the FIP, and \$90 million for the SREP—to support private sector clients working through an MDB's private sector arm and public sector entities working through the MDB public sector arms that would, in turn, channel all funds to private sector recipients in the pilot countries. Procedural details are being finalized for launch in 2013.

---

<sup>6</sup> Proposal for Additional Tools and Instruments to Enhance Private Sector Investments in the CIF, CTF-SCF/TFC.8/8, April 13, 2012.

## UNDERSTANDING CIF IMPACT

### *Strengthened Results Frameworks*

Measuring the results of climate investments is fundamental for development effectiveness and learning. Early in its design effort, the CIF established a set of results frameworks that provided the basis for developing investment plans. In the spirit of the CIF's learning-by-doing approach, the results frameworks were designed as living documents to encourage feedback from pilot countries and MDBs on their practical application. Their input demonstrated that the first generation of results frameworks were useful but challenging for many CIF pilot countries:

- Results chains were sometimes unclear, making it difficult for pilot countries to develop their own results chains.
- Too many indicators across multiple levels created confusion over objectives and raised transaction costs.
- Several indicators did not correspond to the data that countries and MDBs collected through existing processes, making it difficult and costly to establish baselines.
- Many indicators did not allow uniform application and aggregation across all projects, making it challenging to report on the overall results of CIF programs.

Based on measures approved by the CIF governing bodies in November 2011 to improve CIF operations, the CIF Administrative Unit and the MDB Committee initiated in 2012 a process to revise the CIF results frameworks with the objective of making them easier to implement by the pilot countries. In November 2012, CIF governing bodies approved revised results frameworks for the CTF, PPCR, and SREP designed to guide pilot countries, regional programs, and MDBs in refining their own results frameworks to ensure that CIF-relevant results and indicators are integrated in their own monitoring and evaluation (M&E) systems at the country or project/program level. They incorporate a series of basic principles:

**National monitoring and evaluations (M&E) systems:** The results framework are designed to operate within existing national monitoring and evaluation systems, as well as the MDBs' own managing for development results (MfDR) approach.

**Data collection and reporting standards:** In order to aggregate country-level results at the programmatic level, a set of core indicators will be measured using compatible methodologies.

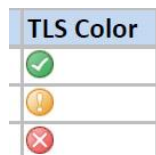
**Flexible and pragmatic approach:** The frameworks are designed to allow and encourage pilot countries flexibility in selecting relevant additional indicators and subsequent reporting provided program outcome indicators are included.

The FIP will continue working with its results framework approved on June 7, 2011, but FIP pilot country meetings in 2013 will serve as a forum to explore a few core outcome indicators that could be measured by all countries to allow reporting of progress at the level of the FIP.

Revised results	Purpose	Outcome objectives
-----------------	---------	--------------------

framework		
CTF	Monitor and evaluate progress in achieving a transformed low carbon economy.	<ol style="list-style-type: none"> <li>1. Avoided GHG emissions</li> <li>2. Increased finance for low carbon development mobilized</li> <li>3. Increased supply of renewable energy (RE)</li> <li>4. Increased users of low carbon public transport</li> <li>5. Increased energy efficiency</li> </ol>
PPCR	Monitor and evaluate progress in achieving increased resilience of households, communities, businesses, sectors, and society to climate variability and climate change, and improved climate responsive development planning across economic sectors	<ol style="list-style-type: none"> <li>1. Adaptive capacities strengthened</li> <li>2. Adequate institutional frameworks in place</li> <li>3. Climate information in decision making routinely applied</li> <li>4. Improved sector planning and regulation for climate resilience</li> <li>5. Innovative climate responsive investment approaches identified and implemented</li> </ol>
<a href="#">SREP</a>	Monitor and evaluate progress in achieving support for low carbon development pathways by reducing energy poverty and/or increasing energy security	<ol style="list-style-type: none"> <li>1. Increased access to clean energy</li> <li>2. Increased supply of renewable energy</li> </ol>

**Call out**



The CIF uses a traffic light system to flag key delivery milestones of investment plans, projects, and programs. The traffic light helps track a project or program from the original date of submission to the expected date of submission for funding approval, and from Sub-Committee approval to the expected MDB approval of the project.

**Box 9. Lessons learned in revising CIF results frameworks**

**Purpose:** The revised results frameworks are designed to support routine annual monitoring of progress with project implementation. Core indicators, which can be aggregated, will produce good insights into the results achieved in the agreed core outcome areas.

**Focus:** All parties involved with the CIF—pilot countries, contributing countries, MDBs, as well as local and global stakeholders—have different interests and needs regarding the information on results generated by the CIF. At its early stages, the CIF results frameworks had aimed at meeting many of those purposes

through measuring as many as 30 or more indicators per program. The revised and approved results frameworks for CTF, SREP and PPCR focus on a small number of core indicators per funding window, which can be measured consistently by all pilot countries and aggregated. This will enable the CIF to meaningfully report back on achievements of investment at country level, fund level, and over time.

**Finding the right balance:** The revised results frameworks focus on “what we need to know” rather than “what is nice to know.” This represents a trade-off, because it means reporting on fewer results chains and indicators and potentially not capturing the full picture of what programs and projects are accomplishing across communities or sectors. But robust reporting on the identified core indicators will allow the programs to demonstrate their impact more visibly and credibly while helping them gain support across stakeholder groups and boost accountability. In addition, the fewer the indicators, the more resources are available per indicator to do the data work, bolstering the quality of reporting even more.

**M&E in country capacity:** To implement the CIF programmatic approach, pilot countries will need an effective institutional and organizational setting to ensure that the results frameworks are implemented and the reporting objectives are achieved. Capacity in pilot countries can challenge successful capture and analysis of high quality data as data sets may be missing for specific populations, geographical areas or time periods; engaging stakeholders may have high transaction costs; or there may be limited expertise or technical capacity to process data. In addition, most countries have to take on this new work on top of already established and, sometimes, competing national data collection programs that, themselves, may require additional resources.

**Development and poverty reduction benefits:** The MDBs have in place their respective results frameworks with indicators that measure progress towards development outcomes, as well as progress in achieving poverty reduction. CIF results frameworks aim to complement existing MDB results frameworks, and individual projects will use at least one MDB development indicator in each project results framework.

## LEARNING HOW TO LEARN

### *Advancing CIF Knowledge Management*

To strengthen the knowledge side of CIF work—from operational findings to new technology applications, policy development to new partnerships, governance questions to market transformation—the CIF began in 2012 an intensive exploration of new avenues for expanding, documenting, and sharing CIF-generated learning. The result is a customized set of knowledge tools that aims to capture and disseminate the unique knowledge emerging from each of the four CIF funding windows.

	<b>Knowledge Tool</b>	<b>Purpose</b>	<b>Activity</b>	<b>Findings/Next Steps</b>
<b>CTF</b>	<a href="#">Private Sector Forum</a> hosted in partnership with Bloomberg New Energy Finance, on November 5, 2012 in Istanbul, Turkey	<ul style="list-style-type: none"> <li>• Identify the best channels for public engagement with private capital</li> <li>• Exchange private sector lessons on climate finance</li> <li>• Engage with entrepreneurs in developing countries and network with private sector players and public sector fund managers</li> </ul>	In-depth discussions on: <ul style="list-style-type: none"> <li>• Public-private interplay in a pragmatic manner with full engagement of the private sector</li> <li>• Common strategies between the public and private sectors</li> <li>• Private investments in adaptation and mitigation</li> <li>• Value chain of climate finance</li> <li>• Matching expectations of project developers, policy makers, and investors</li> <li>• Innovative funding vehicles to accelerate private investment in climate change</li> </ul>	<ul style="list-style-type: none"> <li>• Common agreement among both governments and private sector players—from investors to small project developers to large utility companies—that gains are much larger if common strategies are developed and new partnerships are forged.</li> <li>• A “results book” based on forum outcomes is being produced in early 2013</li> </ul>
<b>PPCR</b>	<a href="#">Online community of practice</a>	Generate and sustain an ongoing dialogue about key issues	<ul style="list-style-type: none"> <li>• Zambia and Bolivia south-south exchange on <a href="#">early</a></li> </ul>	<ul style="list-style-type: none"> <li>• Key drivers for success:                             <ol style="list-style-type: none"> <li>1. Identifying</li> </ol> </li> </ul>

	webinar series	relevant to climate change adaptation	<p><a href="#">warning systems</a> (EWS) offered practical solutions and advice to PPCR pilot countries and regions planning improvements in EWS and disaster risk management.</p> <ul style="list-style-type: none"> <li>• Caribbean nations webinars on <a href="#">data management and sharing</a> offered first-hand experience on the challenges of improving regional integration</li> <li>• <a href="#">Samoa</a> and <a href="#">Nepal</a> chatted about their experiences reaching out to community stakeholders</li> <li>• Dominica shared its experience integrating gender into climate resilience planning.</li> </ul>	<p>virtual tools that are appropriate for pilot country participants and can fit busy schedules</p> <p>2. Providing a platform for sharing and consistent follow-up with country-level specialists and experts</p> <ul style="list-style-type: none"> <li>• Regular pilot country meetings provide an opportunity to gather feedback from countries, and solicit ideas about discussion topics.</li> <li>• Participants in the November 2012 meetings identified topics for the first half of 2013.</li> </ul>
<b>FIP</b>	Four-country study of FIP and REDD+ collaboration at the country level	Understand the dynamics, challenges, and opportunities for REDD+ collaboration and the FIP in different country contexts	Analysis, video, and interviews with key stakeholders in Democratic Republic of Congo, Indonesia, Peru, and Burkina Faso	<ul style="list-style-type: none"> <li>• Insights and lessons from the study were shared in lively, interactive formats at the November 2012 FIP Pilot Country Meeting and 2012 Partnership Forum.</li> <li>• Videos, summary,</li> </ul>



				and report to be finalized and distributed online in early 2013.
<b>SREP</b>	<a href="#">One-day country case-study learning workshop</a> , organized as part of the March 2012 SREP Pilot Country Meeting in Nairobi, Kenya	Pilot country representatives considered: <ul style="list-style-type: none"> <li>• How to prioritize SREP-financed energy interventions to increase renewable energy and expand energy access</li> <li>• How to use the SREP to leverage resources to achieve a common programmatic national approach</li> </ul>	Face-to-face interaction and sharing of experiences, highlighting the expertise and experience of SREP pilot country Kenya	<ul style="list-style-type: none"> <li>• Participants surveyed indicated that this format was effective for sharing experiences and lessons.</li> <li>• <a href="#">The workshop report</a> was distributed at the 2012 Partnership Forum, with key lessons from Kenya highlighted at the SREP booth of the Knowledge Bazaar.</li> <li>• Participants at the November 2012 SREP Pilot Country Meeting brainstormed on topics for future workshops.</li> </ul>

Throughout the year, meetings took place to bring CIF stakeholders together to deepen collaboration and knowledge exchange:

- March and April The semi-annual [PPCR](#), [FIP](#), and [SREP](#) pilot country meetings were hosted for the first time by pilot country governments in Kenya, Zambia, and Brazil, respectively, and included visits to project sites. These meetings bring together representatives of recipient country governments, MDBs, and other national and global stakeholders in an open and collaborative environment to discuss challenges, lessons learned, and best practices in preparing and implementing CIF investment plans.

**Comment [L3]:** ▶ Embed Ethiopia video clip in electronic version

DRAFT 2012 CIF ANNUAL REPORT 5 DECEMBER 2012

- May                      CIF Trust Fund Committee and Sub-Committee Meetings in Washington, D.C.
  
- October 30 to        A second set of [PPCR](#), [FIP](#), and [SREP](#) pilot country meetings, including a  
November 1            [meeting of CTF countries](#), was convened in association with the CIF 2012  
Partnership Forum in Istanbul, Turkey. Both the Spring and Fall pilot country  
meetings were particularly useful in helping pilot countries develop common  
positions on the simplification of CIF results frameworks, and M&E promises  
to be an ongoing theme to be addressed in future pilot country meetings.
  
- October 31 to        CIF Trust Fund Committee and Sub-Committee Meetings in Istanbul, Turkey  
November 5
  
- November 1            [The Master Class on Managing the Impact of Wind Power Development on  
Birds and Bats](#) in Istanbul, Turkey offered CIF-backed case studies from  
Egypt, Turkey, and South Africa followed by presentations from Ethiopia,  
United States, BirdLife International, and World Bank. The discussion  
identified the need for a better understanding of bird and bat behavior,  
environmental impact assessments, post-construction monitoring and  
mitigation of negative impacts, legal and regulatory frameworks, national  
capacity building, and private sector engagement.
  
- November 4            [The 2012 CIF Civil Society Forum](#) in Istanbul, Turkey was organized by the CIF  
CSO observers to focus on “Efficiency and Transparency: Learning from the  
CIF engagement process and lessons for improvements.” Discussions  
resulted in proposals to establish a structure linking observers at global and  
national levels, implement multi-stakeholder regional dialogues, improve  
the quality of country-level stakeholder consultations (including allocating  
sufficient resources), and enhance transparency and public access to  
information at the national level.
  
- November 5            [The 2012 CIF Private Sector Forum](#), hosted in partnership with Bloomberg  
New Energy Finance in Istanbul, Turkey, brought together some 220  
participants representing both the public and private sectors, including  
policy makers and civil society, project developers, direct and institutional  
investors, and bankers, to discuss climate finance from a private sector  
standpoint (see page \_\_).
  
- November 5            [A Technical M&E Workshop: Implementing CIF Results Frameworks In-  
Country](#) was held in Istanbul, Turkey to address the challenges CIF pilot  
countries face (or expect to encounter) when implementing the revised CIF

results frameworks and areas that require more work and support to countries in terms of harmonization of approaches, specific collaboration on subject areas, and learning from each other's experiences.

— November 6 and 7

[The 2012 CIF Partnership Forum](#) in Istanbul, Turkey brought together some 400 representatives of governments, civil society, indigenous peoples, the private sector, MDBs, and U.N. agencies to learn from each other about implementing their CIF programs, and to contribute to deepening global understanding of the linkages between climate change and development. Participants advanced discussions on sustainable energy for all, landscape approaches in climate resilience planning, the role of hydromet and climate services, private sector investments, sustainable cities, M&E, CSO participation, and gender among other issues. Going forward, the CIF Partnership Forum will take place every 18 months, with the next one slated for 2014.

**Box 10. Knowledge Bazaar showcases CIF learning**

insert 2-3 photos from knowledge bazaar OR embed Partnership Forum slideshow

The 2012 Partnership Forum featured the CIF Knowledge Bazaar, an interactive space showcasing the knowledge products and activities organized by the CIF and its partners over the last 18 months. Forum participants immersed themselves in the work of the CIF through booths, videos, web tools, publications, and graphics that highlighted key themes, projects, and emerging lessons.

The Knowledge Bazaar featured a Speakers' Corner where a diverse array of expert presenters from civil society, the private sector, and MDB partners discussed pressing issues such as the role of M&E in mainstreaming climate change into development projects, taking climate finance to scale, landscape approaches in climate resilience planning, and emerging lessons from the FIP.

"The CIF Knowledge Bazaar was engaging and enriching. The Speakers' Corner was especially an excellent environment to have frank and interactive conversations with speakers away from the formality of the larger panel sessions."

Sam Balch, International Climate Fund, Department of Energy and Climate Change, UK

Box 11. CIF learning library continues to grow

[graphics: depict as a “book shelf” containing screenshots of covers]

2012 Partnership Forum proceedings November 6-7, 2012 in Istanbul, Turkey

[IISD Reporting Services daily web coverage](#) of the 2012 CIF Partnership Forum and associated events

[placeholder for CIF project life-cycle paper]

[placeholder for CTF PPCR, FIP, SREP November 2012 pilot countries meeting reports]

[placeholder for M&E showcases report, November 2012]

[Clean Technology Fund Drives Turkey's Renewable Energy Growth](#) World Bank video report, December 4, 2012

[AfDB & CIF in Action, Summer 2012](#) AfDB’s semi-annual report on implementing the CIF in Africa

[PPCR Pilot Countries Meeting Report](#) March 12-13, 2012 in Livingstone, Zambia

[SREP Pilot Countries Meeting Report](#) March 5-7, 2012 in Nairobi, Kenya

[SREP Workshop: Lessons from Kenya](#) March 7, 2012 in Nairobi, Kenya

[FIP Pilot Countries Meeting Report](#) April 2-3, 2012 in Brasilia, Brazil



video: Wondwossen Sintayehu, Ethiopia - Reflections on SREP PCM\_medq

“We are countries with predominately similar difficulties, but different peculiarities in our approaches, so we are able to learn from Kenya or Nepal or Maldives on how they tackled this [or that] problem.”

DRAFT 2012 CIF ANNUAL REPORT 5 DECEMBER 2012

Wondwossen Sintayehu Wondemagegnehu, Environmental Protection Authority, Ethiopia

## 2013

### Building on Forward Momentum

---

Creating the climate for change is a process, requiring careful up-front planning by multiple stakeholders to lay the proper groundwork and ensure success. In 2012, the CIF's fourth year, a shift in activity has occurred with investment planning giving way to more and more on-the-ground implementation. As the CIF moves forward, the trend will continue. In 2013, the CIF is looking forward to:

1. A significant increase in MDB disbursements as countries are now ready to move into project implementation
2. Growth in demand from CIF recipient countries and other stakeholders for CIF-supported climate knowledge supplied through targeted sharing of lessons emerging from the CIF-backed programs and projects with regional and thematic experts and communities
3. Full implementation of the CIF communication strategy, complementing and supporting the knowledge-based learning being generated and shared
4. Effective implementation of revised results frameworks for the CTF, PPCR, and SREP across all projects and programs, while keeping the discussion on the FIP results framework moving forward
5. A continuous push to engage the private sector and embrace innovative business models through both the public and private sector arms of MDB partners

**Graphic:**

\$ 216.3 million = CIF financing disbursed as of December 31, 2012

\$1.5 billion = Projected 2013 CIF financing disbursement [insert disbursement graphic depicting 2012 actual disbursement and projected rise in 2013]

## **Prepare, Empower, Prosper**

### Climate Resilience in the CIF Portfolio

---

Climate change and variability are real and are affecting systems we consider essential to human livelihood: water resources, agriculture, infrastructure, health, and resilience to natural disasters. Integrating climate resilience into development is an imperative for sustainable life on earth, and a reality CIF pilot countries aim to achieve.

Strategies for climate resilience cut across societies, sectors, and geo-political divides, and can take many forms: establishing hydromet networks and early warning systems, weather-proofing roads and other vital infrastructure, conducting crop research to suit changing climate conditions, transforming the policy environment, upgrading urban and rural water management systems, improving access to public and private finance, fortifying assets along vulnerable coastal zones, linking disaster risk management and adaptation, modifying construction standards, and other crucial short, medium, and long-term interventions.

To follow are snapshots taken by the MDBs that capture some of the CIF-backed climate resilient development strategies being planned and implemented to give people worldwide the power to prepare for and prosper in the face of climate change.

## FROM SCIENCE TO SOLUTIONS

### CLIMATE RESILIENT DEVELOPMENT IN OUR WORLD

By the World Bank Group (WBG)

*"As a scientist, I feel a moral responsibility to be very clear in communicating the dangers of climate change... I think the question we have to ask ourselves is not simply is climate change real or not, I think we have to begin looking hard at what the world is going to look like for our children."*

Jim Yong Kim, President of the World Bank Group

Climate change is one of the overarching drivers behind sustainable development because protecting the earth climate system is one of the key dimensions of sustainability. [The United Nations Conference on Sustainable Development](#) (Rio+20) renewed its commitment to the sustainable development paradigm, and expressed a determination to pursue the Green Economy Agenda in the context of sustainable development and poverty eradication. But while sustainability has become the explicit goal, the climate has yet to "feel" the difference.

Rise in greenhouse gas emissions over the past decade has been higher than even the most pessimistic projections. At the same time, the process of reaching a comprehensive global emissions reduction agreement has experienced significant delays. These factors have placed the world on a dangerous trajectory. It looks increasingly likely that the world might miss the 2°C target, despite it being widely agreed upon as an important guardrail threshold that should not be crossed in order to avoid dangerous and abrupt climate change<sup>7</sup>.

The IPCC's [Special Report on Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation \(SREX\) \(2012\)](#)<sup>8</sup>, representing the latest scientific consensus, states that "a changing climate leads to changes in the frequency, intensity, spatial extent, duration, and timing of extreme weather and climate events, and can result in unprecedented extreme weather and climate events." The report anticipates that today's once-in-20-year extreme temperatures are likely to happen every year in some regions by the end of the 21st century, with similar projections for extreme rainfall and associated floods and droughts.

[Turn Down the Heat](#), a snapshot of the latest climate science prepared for the World Bank (2012)<sup>9</sup> by the Potsdam Institute for Climate Impact Research (PIK) and Climate Analytics, says that the world is on a path to 4°C warmer by end of this century and current greenhouse gas emissions pledges will not

---

<sup>7</sup> WDR, 2010; Lenton et al., 2008

<sup>8</sup> Field, Christopher B., et al. "Managing the risks of extreme events and disasters to advance climate change adaptation." A Special Report of Working Groups I and II of the Intergovernmental Panel on Climate Change Cambridge University Press, Cambridge, UK, and New York, NY, USA (2012).

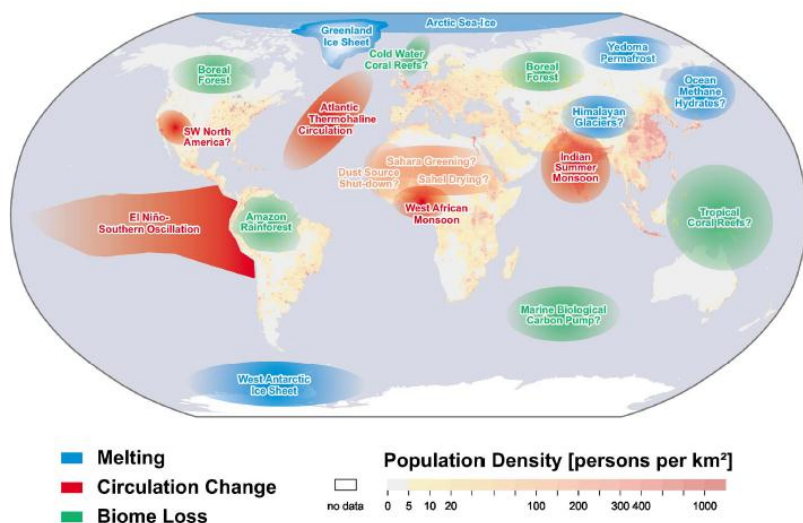
<sup>9</sup> World Bank, 2012. Turn Down the Heat: Why a 4°C Warmer World Must Be Avoided



reduce this by much. The report confirms that 4°C scenarios are potentially devastating to all nations, but stresses that the distribution of impacts is likely to be inherently unequal and tilted against many of the world’s poorest regions. For example:

- Even though absolute warming will be largest in high latitudes, the warming that will occur in the tropics is larger when compared to the historical range of temperature and extremes to which human and natural ecosystems have adapted and coped, consequently leading to significantly larger impacts on agriculture and ecosystems.
- Sea-level rise is likely to be 15 to 20 percent larger in the tropics than the global mean.
- Increases in tropical cyclone intensity are likely to be felt disproportionately in low-latitude regions.
- Increasing aridity and drought are likely to increase substantially in many developing country regions located in tropical and subtropical areas.

Figure 5. Map of potential policy-relevant tipping elements in the climate system<sup>10</sup>



Many potential tipping points in the Earth system could be exceeded as temperatures rise and threshold for important natural phenomena are passed. Examples include significant and rapid losses of ice from the Greenland and/or West Antarctic ice sheets and the conversion of the Amazon rainforest to savanna or grassland. Cities, which are home to almost 50 percent of global population, are particularly susceptible to climate impacts, and record heat events are already being recorded around the world. Repercussions will be profound, as sudden changes caused by non-linear phenomena would reduce the resilience of natural and managed ecosystems and affect the resilience

<sup>10</sup> Lenton, T. M., Held, H., Kriegler, E., Hall, J. W., Lucht, W., Rahmstorf, S. and Schellnhuber, H. J. (2008). [Tipping elements in the Earth's climate system](#). Proceedings of the National Academy of Sciences, Online Early Edition.

of socio-economic systems globally.

**Call out:**

"In 2000, Mozambique experienced its worst floods in 50 years killing about 800 people and displacing 540,000, costing the country 10 percent of its GDP. Looking to the future, our analysis suggests that almost 1 million people will be displaced from coastal areas in 30 years from now if no action is taken. Behind these figures will lay human suffering on an unimaginable scale."

Mrs. Ana Chichava, Deputy Minister, Ministry for Coordination of Environmental Affairs

**Working Toward Transformational Solutions**

The world must work collectively to step up action on the mitigation/low carbon front. Even as the world seeks to hold the guardrail at 2°C above pre-industrial levels, and defy the move to 4°C, the imperative to mainstream climate resilience and build the enabling environment to engender transformational climate resilient development pathways is already past due.

Considerable efforts are being made to understand this highly complex problem and to deal with continuing uncertainty over climate developments. At the same time, increased variability will challenge actors across society to learn to deal with climate "on a daily basis."

Instead of piecemeal responses, governments must develop and implement comprehensive and inclusive approaches to transformational adaptation that break down silo tendencies in sector planning. The more the climate is projected to change, the clearer it becomes that resilience is a multi-sector, multi-dimensional concern.

The CIF, and the Pilot Program for Climate Resilience (PPCR) in particular, are playing a crucial role here. In providing scaled-up financing to initiate transformational change, they help countries to pilot and show "what can be done" when significant resources translate into committed political engagement and programmatic thinking beyond silos. This has also led to significant opportunities for using the PPCR funds to leverage additional funding from other sources resulting in a manifold increase of the overall resources available.

**Box 12. Financing instruments available from international MDBs in combination with the CIF**

Climate-resilient development planning can also be encouraged and enhanced with strategic financing in combination with and complementary to the support from the CIF. A number of instruments tailor-made for countries with different needs are available:

**Development policy loans** provide untied, direct budget support to governments for policy and institutional reforms aimed at achieving a set of specific development results. In Mozambique, a technical assistance package backed by the PPCR is helping build institutional capacity so reforms related on climate resiliency can be achieved in a three year time frame. "It is a good instrument for

the government to commit itself to undertake these reforms,” says Xavier Chavana, Ministry of Planning and Development, Mozambique.

**Adaptable program loans (APL)** provide phased support for long-term development programs. They involve a series of loans that build on the lessons learned from the previous loan(s) in the series. They are used when sustained changes in institutions, organizations, or behavior are key to successfully implementing a program. They offer longer term support when time is required to build consensus and to convince diverse actors of the benefits of politically and economically difficult reforms.

For example, the PPCR is supporting APLs in different phases in several Caribbean countries, including Dominica, Saint Lucia, Grenada, and Saint Vincent and the Grenadines, flexibly supporting where it can be deployed most usefully.

**Additional financing for investment lending** goes to projects that are already underway, but may require additional support to scale up activities or address a climate-related aspect requiring attention. PPCR countries are likely to take advantage from this offer further down the road.

In addition to financial support, the PPCR is helping to establish country coordination mechanisms and institutional arrangements that are nurturing this thinking and approach, building capacity, and acting on this shift through targeted investments in each country. In the strategic and highly participatory process of developing their strategic programs for climate resilience (SPCR), pilot countries of the PPCR worked with the MDBs to provide the basis for addressing short, medium and long term actions on climate adaptation as part of national development strategies, policies and plans. The strong emphasis on highly participatory, consultative process in developing the SPCRs is an innovative feature of the program.

**Box 13. Enabling transformational change where it is most needed**

The PPCR enables countries to apply the PPCR resources to issues where the transformation change can be triggered at scale. Some country visions of transformational change:

- Bangladesh is using PPCR to scale up resiliency investments in all vulnerable coastal districts.
- Niger is using PPCR to reduce the country’s vulnerability to food shortages exacerbated by climate change.
- Samoa is using PPCR funds to reinforce aging infrastructure in densely populated coastal zones

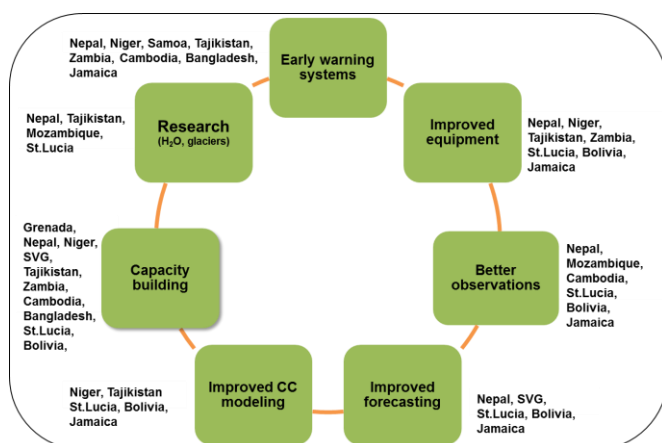
**Mobilizing Information: Putting Climate Services to Work**

Hydro-meteorological and climate services (HCS) are key to enabling more informed decision making to transform and mainstream climate resilient development. They contribute directly to resilience while at the same time acting as key enablers of a broad range of adaptation decisions, such as disaster relief management systems, early warning systems, and agricultural extension systems. Private companies and businesses also need and rely on the type and data provided by HCS to make investment decisions related to climate risks mitigation for their operations.

Indicative evidence on the economic returns of HCS suggest very high returns on investment, producing economic benefits for industries, businesses, households, and individuals across a range of sectors from agriculture and transport to tourism and health. Depending on the estimation method, a World Bank study on Europe and Central Asia estimated cost-benefit ratios of 1:2 to 1:10 for investments into National Meteorological and Hydrological Services <sup>11</sup>. And increased climate variability and long term climate change only stand to increase the return even further. According to the World Meteorological Organization, one dollar invested in disaster preparedness can prevent seven dollars' worth of disaster-related economic losses.

Many countries have therefore started to invest in HCS and are receiving technical support and financing with the CIFs and the PPCR to ensure that this crucial building block for sustainable climate resilient development and enabler of transformation change is strengthened across the globe.

Figure 6. Illustrative overview of PPCR pilot countries' hydromet-related projects and activities



### Putting People at the Center

In the development of the institutional landscapes, countries should take a people-centered approach that places communities at the center of resilience. Climate change adaptation, disaster risk reduction, and social protection efforts should be integrated as they are linked by a shared focus on the vulnerability of populations to a variety of shocks and stresses. The insights they can gain collectively promise to be more effective at reducing vulnerability than working in isolation. Public sector, private sector, civil society, local communities, indigenous peoples, and academia—each group has a role in the creation of the enabling environment for adaptation, and each has specific needs that

<sup>11</sup> Tsirkunov, V., A. Korshunov, M. Smetanina, and S. Ulatov. 2006. Assessment of Economic Efficiency of Hydrometeorological Services in the Countries of the Caucasus Region. Report prepared as part of Weather/Climate Services pilot study in the countries of Europe and Central Asia.

can be fulfilled only by others.

The private sector is already feeling the impacts of the changing climate and starting to incorporate climate risk concerns into their operations. Recent flooding in Thailand, for instance, that shut down thousands of businesses and disrupted the global supply chain is just an example of the magnitude of impacts that the private sector is going to face. Businesses are becoming aware that they need to find innovative solutions to ensure that their assets and operations are resilient to climate change. Moreover, changes in climate are also presenting new opportunities for private sector to provide new products and services, such as climate proofing infrastructure, drought and flood resistant seeds for agriculture, among others.

Taking a people-centered approach also means to engage more fully with the perspectives, priorities, and capacities of poor people. This also includes the consideration of gender aspects, as women are disproportionately vulnerable to the effects of natural disasters and climate change where their rights and socio-economic status are not equal to those of men.

**Box 14. Climate change champions empower Zambia's climate resilience**

The Principal Economist of the Ministry of Finance and National PPCR Coordinator, David Kaluba, reflected that “team building across sectors, civil society, and MDB partners can add time and money but provide greater value for the investments.” He stressed the value of the comparative advantage that various partner stakeholders can bring to the process and that “Zambia is striving to build a cadre of champions from key sectors, as well as from among law makers and policy makers.”

Effective institutional coordination, stakeholder engagement, and knowledge management are key pillars of the PPCR. Zambia is maintaining the programmatic nature of its strategic program for climate resilience under the PPCR by rooting it within the thematic and institutional framework established under the National Climate Change Program. The move has ensured that investments have been designed to achieve national development priorities and that implementation takes full advantage of different national institutions and multi-stakeholder platforms, strengthening their capacities in the process.

**Conclusion**

In the face of growing urgency to address both climate variability and climate change, the CIF has mobilized one of the largest concentrated efforts to pilot and demonstrate climate resilient development at scale, and emerging lessons can fuel transformation. To create climate-resilient societies, governments must embed responses to climate impacts across economic and social sectors, and create systemic and programmatic approaches that provide broad-based, inclusive resilience solutions based on reliable climate data. Ministries must come together to find cross-cutting approaches and programs, and partners must be engaged at every level of society.

### **The World Bank Group**

The World Bank is helping developing countries and their people find ways to adapt to climate change. Its strategic approach to climate change and development emphasizes and promotes synergies between climate resilience and disaster risk management as part of overall adaptation strategies and climate smart development. It focuses on building knowledge and partnerships, supporting country-led action, and sourcing and extending multiple typologies of financing.

#### 1. Knowledge products

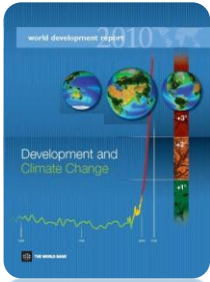
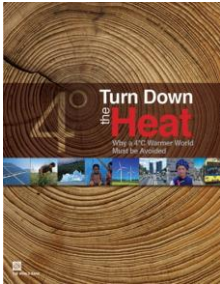
- Turn Down the Heat: Why a 4°C Warmer World Must Be Avoided
- Economics of Adaptation to Climate Change
- WB Climate Change-GFDRR Knowledge Portal
- WB Products and Advisory Services on Disaster Risk Financing
- Ecosystem Based Adaptation—Promoting Nature-based Solutions to Counter L&D
- Natural Hazards, Unnatural Disasters
- Social Dimensions of Climate Change

#### 2. Adaptation trust funds

- CIF/PPCR
- Global Facility for Disaster Risk Reduction (GFDRR)
- Least Developed Countries Fund (LDCF), Special Climate Change Fund

#### 3. Instruments

- Country Assistance Strategy (CAS), Country Policy Strategy (CPS)
- International Development Association (IDA), International Bank for Reconstruction and Development (IBRD) instruments
- Specific Investment Loans (SIL), Development Policy Operations (DPO)
- Technical Assistance (TA)
- IDA-16 provision
- Bilateral, multilateral and other trust funds



## SUPPLY AND DEMAND

### ENSURING AFRICA'S WATER, FOOD, AND ENERGY SECURITY

#### By the African Development Bank

*"The African Development Bank perceives accelerated, strong, sustainable and inclusive growth is an essential part of its long term strategy. This encapsulates water resources management in a green growth development framework and resilience vis a vis climate change and other contemporary challenges such as population growth, urbanization and natural resource scarcity."*

*Donald Kaberuka, President of the African Development Bank Group  
(World Water Conference, 14 March 2012)*

Climate change is a major motivation for green growth in Africa. The continent has contributed less than other regions to climate change and other global environmental changes, but Africa's population and economy are suffering disproportionately from the negative effects. The effects of climate change on the water sector are particularly acute in Africa as they ripple across societies, ecosystems, and economic sectors.

Global warming means higher temperatures which, in turn, mean greater evapotranspiration (or evaporation and plant transpiration). For example, warming by 1° C could result in a 10 percent reduction in surface runoff in Morocco. Increased climate variability equates to more severe, intense, and prolonged droughts and floods and changes in groundwater recharge. By 2020, up to 250 million people in Africa are projected to be exposed to increased water stress. This has disastrous effects on the most vulnerable people in Africa, i.e. the poor, women, and children. Women and girls spend more time fetching water and less time in school. Less access to water and poor sanitation also exacerbate malnutrition and water-related diseases in children.

#### Feeling the Impacts on Agriculture, Coastal Life, and Energy Infrastructure

The impacts of climate variability and change are particularly important for the agriculture sector in Africa given that around 30 percent of the continent's GDP and 70 percent of the continent's population is linked to rain-fed agriculture. For every 1° C rise in temperature, crop yield losses of up to 16 percent are being calculated. By 2020, yields from rain-fed agriculture could be 50 percent less in some countries, affecting food security, exacerbating malnutrition, and increasing dependence on food aid. This is bad news for countries like Mozambique, Niger, and Zambia whose economies are heavily based on subsistence farming and animal husbandry. With support from the African Development Bank (AfDB), these nations have each developed strategic plans for climate resilience under the CIF's Pilot Program from Climate Resilience (PPCR) that focus on the climate-sensitive agricultural sector given its unique



position to deliver pro-poor growth among rural households and to reduce exposure to crises of food prices and availability.

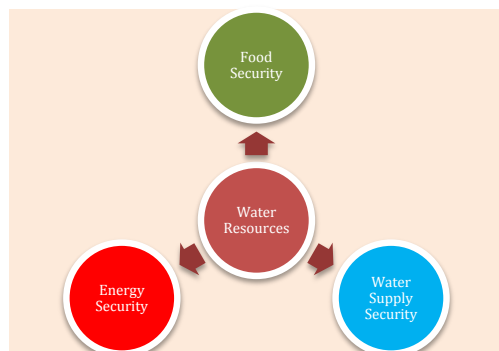
Along Africa's coasts, livelihoods are also threatened. Africa is home to 22 of the 33 coastal countries determined "highly vulnerable" to climate change impacts on fisheries. Nineteen big cities (over 1 million inhabitants) in the low-elevation coastal zone (within 10 meter elevation and 100 kilometer distance from the coast) are threatened by sea level rise and cyclones, including coastal cities in Mozambique, spurring PPCR investments to increase the climate resilience of Beira and Nacala. Mozambique aims to generate experience and guidance for building climate resilience into coastal urban planning and development elsewhere, including the capital Maputo.

Increased incidents of drought may also impact Africa's power sector. Hydroelectric generating capacity dropped by half in Uganda following Lake Victoria's nearly two-meter drop in water levels. Kenya, Tanzania, and Ethiopia have also been affected by drought-related power shortages and have had to turn to costly thermal generators to ease the supply deficit. In an effort to increase energy efficiency and diversify its energy mix, Ethiopia is pursuing wind and geothermal power as part of its \$50 million investment plan under the CIF's Program for Scaling Up Renewable Energy in Low Income Countries (SREP).

#### Managing the Nexus of Water, Food, and Energy Security

Water is a natural resource, an economic asset, and a hazard, and Africa's ability to mitigate and adapt to the impacts of climate change requires a multi-sectoral, integrated approach to its management. Preparing for a resource-scarce future and meeting today's water, food, and energy challenges requires solutions that take into account all three sides of the water, food, and energy security nexus. Water crosses national boundaries, and African countries must work together to analyze and understand the problems and create multi-country design strategies to cope with the impact of climate change and variability. It is therefore essential that the cross-cutting nature of water is fully acknowledged and fully mainstreamed into national and trans-boundary water resources management plans.

Figure 7. Water, food, and energy security nexus



**More reliable, accurate information**

The solution lies, in part, in upgrading the hydro meteorological and climate information and knowledge base in most countries to improve the reliability and quality of data that supports decision making systems, as well as early warning systems. National meteorological and hydrological services (NMHS) and other climate services providers across Africa must work to strengthen observational networks, data analysis, management, and exchanges. The capacity of NMHS training and research institutes, regional climate centers, and other climate-related organizations must also be enhanced to produce and deliver a full range of climate services in support of sustainable development in various sectors.

Community involvement is crucial in building and maintaining observational and climate information networks. Increased access to knowledge and training on climate change and adaptation will, in turn, empower local communities to participate more effectively in decision making on adaptation plans and their implementation.

**Call out**

“You can only adapt to that which you know.”

Dr. Joseph Kanyanga, Zambia Meteorological Department

Niger, for example, aims to develop climate information and forecasting capacity with PPCR and AfDB backing. Plans include improving the national climate observatory system, researching and optimizing climate modeling, strengthening the national early warning system, and expanding communication on climate information to end users. This will allow adaptation responses to be better tailored to specific vulnerable populations, especially rural communities that rely on rain-fed farming.

In addition, the country will implement a weather index-based crop insurance scheme in collaboration with the World Bank Group’s International Finance Corporation (IFC) to cushion farmers and pastoralists against climate-related losses from floods and droughts and strengthen farming, food production and agricultural development to meet the country’s food security requirements.

**More durable, climate-resilient infrastructure**

Water resources can be better managed and infrastructure better designed when stakeholders understand variability and changes in the climate and communicate that information effectively. Cameroon, Kenya, and Ethiopia are examples of countries investing in drainage systems upgrades to cope with more severe and frequent flooding in urban areas, while Tunisia is developing wastewater treatment facilities to reuse this precious resource.

In the agricultural sector, feeding everyone in the future with limited water resources requires Africa to grow more “crops per drop,” and rethink how food is produced, consumed, and traded from a water perspective. Water management must be undertaken at the lowest appropriate level, calling on public awareness raising and watershed stewardship. Communities must demonstrate adaptive behavioral

changes and cultural shifts in the means of production and consumption of water by including indigenous and modern knowledge, water-use efficiency, and wastewater reuse.

Supporting this pragmatism, small scale irrigation solutions that draw from rain water harvesting, ground water, or small ponds and reservoirs will have a significant role to play in nurturing both staple crops and cash crops to diversify diets and insure against the crops failure. With adequate support of the entire value chain— from water provision to produce marketing—backed up with capacity building to ensure sustainability, these projects can support rural livelihoods and expand productivity.

In Niger, seven episodes of drought over the last 40 years have had dramatic consequences on agro-pastoral production, food security, and people's livelihoods. Backed by the AfDB and the PPCR, Niger's Sustainable Management and Control of Water Resources Project seeks to boost food production in ten rural districts, and ultimately improve the livelihoods of some 708,000 people, by controlling the flow of fresh water to fields and pastures. Mini dams, wells and boreholes, irrigation schemes, and erosion control and other water management measures will be implemented along with the social infrastructure and training needed at the local level. Moreover, climate resilient seeds and farming techniques will be introduced to increase agricultural production.

In Mozambique, frequent flooding and cyclones in the southern Gaza Province has severely damaged existing rural infrastructure and weaken agricultural production. Mozambique's PPCR/AfDB Baixo Limpopo Climate Resilient Agriculture Pilot Project intends to improve the lives of some 8,000 farm families by weatherizing rural roads and rehabilitating irrigation and drainage systems to withstand weather extremes and sea water intrusion. These measures will be complemented by the introduction of new climate-proofed seeds, localized processing and storage facilities, and expanded access to markets as yields increase. Improved infrastructure leading to better water management and increased participation in agricultural activities is expected to help smallholder farmers more than double their incomes over a 20 year period with yields expected to increase by 100 percent.

#### **The African Development Bank**

The African Development Bank (AfDB) is dedicated to helping Africa build its adaptive capacity and ensure that climate resilience is mainstreamed into country development programming and implementation. Particular emphasis is on supporting projects and activities that enable countries to address the impact of climate change and variability on water resources management, develop water security strategies, and foster regional cooperation on trans-boundary water resources management.

Since 2002, the overall financing of water supply and sanitation operations by the AfDB has increased both in number and in volume. The Bank's water supply and sanitation sector investment has grown several folds since 2002, from less than \$70 million per annum to an expected \$1 billion per annum at the end of 2012.

Adding to these efforts to accelerate the development of the sector are the AfDB's two flagship water initiatives: [the African Water Facility \(AWF\)](#) and [the Rural Water Supply and Sanitation Initiative \(RWSSI\)](#). Over the past six years, the AWF has made steady progress towards achieving its objective of mobilizing resources for the water sector in Africa. To date, a total of 72 projects amounting to €89 million of grant funding have been approved and are being implemented in 31 countries. Trans-boundary projects raise that number to 51. The RWSSI has helped over 45 million people gain access to drinking water and nearly 30 million to improved sanitation since its inception in 2005. It is moving forward with 31 programs approved in 23 countries with for total USD 5.5 billion.

## **KEEPING LATIN AMERICAN AND CARIBBEAN WATERSHEDS IN BALANCE**

### **By the Inter-American Development Bank (IDB)**

*“The IDB is helping Latin America and the Caribbean to take the goal of sustainable, inclusive growth into a measurable reality. The Bank’s commitment to climate change is very solid because the Region is one of the most vulnerable to its impacts.”*

*Luis Alberto Moreno, President of the Inter-American Development Bank  
(Ministerial Lunch, Rio+20 Summit on Sustainable Development, June 2012)*

In Latin American and Caribbean (LAC) countries, rainfall and temperature patterns are changing regionally and locally, impacting both the supply and the demand sides of the water sector and exacerbating current water stress among water users in some regions. This could lead to water conflicts if due measures are not taken into consideration. Moreover, observed non-stationarity of rainfall series, also exacerbated by climate change, will have profound implications for management approaches on ecosystem services, energy and agricultural productivity. As water resources availability becomes uncertain, different water uses would have to be adjusted to account for climate variability and change. This would have to be accompanied by new or revised policies and an efficient monitoring and evaluation structure for new projects aimed at reducing vulnerability of water resources and dependent communities to climate variability and change<sup>12</sup>.

The inclusion of climate change considerations within existing structures for integrated water resources management (IWRM) programs is of utmost importance for LAC countries, and becomes the logical and most effective way to help all the different users, including communities, to adapt to the impacts of climate change on water resources availability (both in quality and quantity). In order to respond to these challenges, the Inter-American Development Bank (IDB) has been working with its clients on a regional approach to IWRM comprising five basic areas:

1. **Supply, distribution and sustainability of water sources:** requiring better understanding of climate and its functioning, of the development and utilization of useful climate change scenarios, coupled with river basin models to translate precipitation and atmospheric data (provided by climate scenarios) into useful planning information. It also requires building public awareness, institutional and organization capacity to interpret and use the information provided, and ability to properly manage the process.
2. **Demand, efficient water use and management:** requiring awareness building, promotion of efficiency in technology and cultural practices, adequate monitoring, reporting and verification, and community participation and action.

---

<sup>12</sup>Regional Policy Dialogue in LAC, 2010-2012

3. **Contamination and degradation of water quality:** requiring reductions in water consumption and increases in water regulation, such as increasing minimum flows through reservoir discharges as needed to preserve environmental standards, to cope with reduced auto-purification potential of warmer water
4. **Water resources management infrastructure:** requiring new performance standards and guidance on building for the long-term and against climate uncertainty
5. **Governance and institutional strengthening:** requiring water planners and managers to develop inclusive and participative approaches to water allocation and water management, as well as conflict resolution schemes attuned to the cultural, institutional, and geographical characteristics of the water basin

The IWRM approach is a powerful process that already embraces social and environmental sustainability, which can be aligned towards short-to-long term climate change adaptation at the basin level. Likewise, new tools for the evaluation and comparison of different water management policies with respect to its sustainability with a climate change lens are required.

In this context and as an implementing agency of the CIF, the IDB is supporting a group of countries in the LAC region in the development of specific investment projects in the water sector under the Pilot Program for Climate Resilience (PPCR). These projects include approaches that follow the IWRM process.

**Bolivia: Climate resilience program for the water and sanitation systems of the metropolitan areas of La Paz and El Alto**

The geographical location of Bolivia in the Andean region, combined with high levels of poverty, make it an extremely vulnerable country to climate change. The availability of water resources for various areas of the country is being affected by accelerated glacier melting, changes in the spatial and temporal distribution of precipitation and increased evapotranspiration.

The overall objective of Bolivia's program is to increase the resilience of the entire water supply system of the cities of La Paz and El Alto. The specific objectives are: (i) to improve the continuity and quality of the water system in the metropolitan areas of La Paz and El Alto; (ii) to allow the expansion of coverage; (iii) to generate experiences and lessons to integrate climate change in the planning, design, and implementation of water projects in high mountain environments; (iv) to start the preparation and implementation of a pilot project of an IWRM plan that is multipurpose, participatory, sustainable, resilient, and includes the gender dimension; and (v) lay the groundwork to have a climate resilient water system for the metropolitan areas of La Paz and El Alto.

To provide assurances that the metropolitan area of La Paz and El Alto and all water users in the river basin will continue enjoying a sustainable and resilient water provision, it is necessary to consider a group of actions including: (i) improving the current understanding of climate change impacts on water resources so that projects and programs can be designed to ensure the resilience to climate change in the water supply system; (ii) an assessment of the water supply current system reliability and how it will be affected by climate change over the next three decades; (iii) the conservation of the sources of the existing water supply through integrated river basin management plans; (iv) the search and development of new sources of water supply; (v) the implementation of regulations and education programs for users to ensure the rational use of the resource; and (vi) the improvement of the existing distribution systems and water usage to reduce losses.

**Jamaica: Climate resilience program for water and agricultural systems within the Rio Minho region of south west Jamaica**

The geographic location of Jamaica within the Caribbean Sea and the country's limited adaptive capacity presents significant challenges as it attempts to increase its resilience to the impacts of climate change. An important step in meeting this challenge is to ensure that all key policies, plans, regulations, and legislation, as well as regulatory institutions, provide the framework for individuals, communities, businesses, civil society, and government agencies to deliberately incorporate climate change risk reduction/adaptation strategies as a normal part of their planning, decision-making processes, which should be complemented by strategic adaptation interventions particularly at the watershed or river basin level.

The principal objective of the Jamaica program is to mainstream climate change into the development plans and planning processes for two river basins, Rio Minho and Rio Bueno River Basins, located in the south-central section of the island, and to increase adaptation to the impacts of climate change by stakeholders in vulnerable sections of the two areas. Specifically the program will (i) create an enabling framework for mainstreaming climate change adaptation at the local and national levels; (ii) characterize the project area using baseline data and develop vulnerability assessments and adaptation plans for the prioritized sectors, the infrastructure and vulnerable communities in the project area; (iii) improve river basin planning and management to protect the recourse base of the area and safeguard livelihoods, through vulnerability assessment and integrated planning; and (iv) develop and implement integrated adaptation strategies (water, land, infrastructure) to address the anticipated impacts of climate change in the project area. The expected outcome of these measures will be the improvement of the livelihoods of over 65,000 people within farming communities through the implementation of climate sensitive adaptation strategies in river basin planning and management.

**The Inter-American Development Bank**

The Latin America and Caribbean (LAC) region is highly vulnerable to the detrimental effects of climate change. According to the most recent Intergovernmental Panel on Climate Change (IPCC) assessment reports, important changes in precipitation and increases in temperature have been observed in the region.

It is imperative that LAC countries address climate change vulnerabilities and respond with adequate adaptation and mitigation measures in key economic sectors as energy, transport, agriculture, water resource management, and urban development.

The Inter-American Development Bank (IDB) has developed in 2012 a Climate Change Action Plan (2012-2015) as a direct instrument to implement its Strategy for Climate Change. Given the scale of needed interventions and resources available to cover climate-related priorities in the LAC region, the Action Plan is focusing on the following three key priority areas:

- Strengthening the IDB's involvement in adaptation, including increased financial resources to strengthen the resilience of natural systems, communities, businesses, and economies in the region to the impacts of climate change
- Supporting activities with the largest potential for GHG emissions reduction, including those from land use change and deforestation, transport, and power generation
- Promoting technology development, social engagement, and resource mobilization that encourage synergies between adaptation and mitigation actions

The strong commitment of the IDB to support climate change-related activities in the region is also represented by the increasing number of operation approved by the Bank in recent years. Between 2006 and 2011, the IDB financed more than USD 7.5 billion in climate change mitigation projects and more than USD 1.1 billion in adaptation.

These numbers are expected to increase in the following years, due to the target established at the Bank's Ninth General Capital Increase (GCI 9) Board of Governors in the 2010 Annual Meeting. This capital increase established an annual target of 25 percent of lending by 2015 for climate change, sustainable energy, and environmental sustainability.



2-page spread--colored paper to off-set section

## SPOTLIGHT ON CLIMATE RESILIENT AGRICULTURE

Agriculture accounts for one third of developing countries' aggregate GDP, and employs 65 percent of the work force. It is widely agreed that climate change and variability may further decrease the already low productivity of agriculture in many developing countries. There is an urgent need to increase the resilience and capacity of the agricultural production systems of these countries to effectively adapt.

### Box 15. Effects of climate change and variability on plants in low latitudes

- Heat stress
- Decreased soil moisture
- Increased water shortages
- Disruption from frequent and more severe natural disasters
- Increased crop pests and diseases due to warmer temperatures

Nowhere will the achievements of the PPCR be as crucial as in agriculture, and most PPCR pilot countries have included agriculture and food security in their strategic programs for climate resilience. While the composition of agricultural adaptation programs varies from country to country, some common features are emerging:

#### Physical investments

- Small and large scale irrigation infrastructure
- Coastal defense infrastructure to control predicted sea-level rise and associated adverse economic and social effects
- Floodgates for secure water flows and control of salinization or irrigated land
- On-farm productivity-enhancing and climate-smart land and water management practices
- Storage facilities for seed and agricultural output

#### Capacity building

- Knowledge generation (studies, climate data management, information sharing, climate modeling)
- Stakeholder training for the integration of climate resilience into farming and agricultural development planning
- Development and dissemination of climate products and services (hydro-meteorology)
- New technology (improved seeds, new irrigation techniques)
- Awareness-raising

- Strengthening of national meteorology and hydrology services

**Policy support and enabling environment**

- Regulations and policies pertaining to irrigation water use
- Index-based weather insurance for agriculture
- Agricultural research
- Establishment of early warning systems
- Creation/strengthening of social safety nets

These measures are aimed at 1) raising the awareness of policy makers, sector planners, and producers about current and future vulnerability of agriculture and food security to climate risks and change, and 2) helping policy-makers and producers to adopt appropriate adaptation measures and risk management strategies. Their successful implementation will result in wide-ranging benefits and will help to achieve the strategic objective of increased and stable agricultural production in PPCR pilot countries.

Yet, more needs to be learned and done in order to meet the complex challenges of adapting farming systems to climate change and ensuring food security. As more and more PPCR pilot countries translate their adaptation investment plans into operations on the ground, increased attention will be needed to deepened public engagement, strengthen multi-sectoral engagement, expand the range and type of decision-relevant information, enhance policy-making and planning tools, and secure long-term financing.

**Call out**

Approximately 22 percent of PPCR funding, \$193 million, is focused on 10 agriculture and food security projects in Bangladesh, Bolivia, Cambodia, Mozambique, Nepal, Niger, Tajikistan, Yemen, and Zambia.

Figure 8. PPCR agricultural investments categories



## BUILT TO LAST

### CLIMATE PROOFING INFRASTRUCTURE IN ASIA

By the Asian Development Bank (ADB)

*“To address climate change adaptation, countries should take a “no regrets” approach. Such an approach to adaptation involves measures that represent sound development practice as part of a broader effort to achieve inclusive and environmentally sustainable growth.... Infrastructure investments should be guided by the principles of sustainability, accessibility, and social Inclusiveness.”*<sup>13</sup>

Climate change threatens development, increases the likelihood of disasters, and further exacerbates the plight of the poor because they lack the resources to adapt. However, climate change adaptation actions may not be an immediate priority for low-income countries due to low awareness, especially with regard to potential impacts of climate change and their implications for economic growth, exacerbated by limited availability of funds likely to be channeled to development concerns that appear more pressing. The CIF’s Pilot Program for Climate Resilience (PPCR) addresses this conundrum by demonstrating the benefits of integrating climate risk resilience into low-income countries’ core development planning, piloted in selected highly vulnerable low-income developing countries.

In a recent study, the World Bank (2010)<sup>14</sup> estimated the costs of climate change adaptation in developing countries at \$75 billion–\$100 billion a year over the period 2010–2050. Costs to manage climate change impacts on the infrastructure sector alone, represent an estimated \$15 billion–\$30 billion annually over the same period. Urban infrastructure and roads account for most of this estimated adaptation cost. Geographically, more than 40 percent of this cost is expected to be incurred in South and East Asia and the Pacific. The estimates are based on a global mean temperature increase of 2°C by 2050; adapting to an even warmer world would be much more costly.

Infrastructure is susceptible to changes in the environment in which it is built. Prolonged changes in temperature and precipitation, associated hydrological changes, and increased frequency and intensity of storms and extreme climatic events can exert a toll on the built environment. At the same time, physical infrastructure itself can cause changes in the natural environment and may affect the vulnerability of surrounding areas. Appropriate adaptation measures can reduce the vulnerability of infrastructure—roads, bridges, buildings, water supply, irrigation and drainage, power plants, and other structures—and the communities who depend on these vital assets.

Because infrastructure plays an important role in the socioeconomic development of countries, it is important for infrastructure decisions to reflect accurate assessment of potential sensitivity to a

<sup>13</sup> Green Growth, Resources and Resilience Environmental Sustainability in Asia and the Pacific. United Nations and Asian Development Bank publication ST/ESCAP/2600, RPT124260 Printed in Bangkok 2012

<sup>14</sup> World Bank. 2010. *Economics of Adaptation to Climate Change*. Washington, D.C.

changing climate. A significant feature of PPCR is that the program promotes use of projected information and accumulated knowledge to demonstrate the benefits of integrating climate risk assessment into countries' core development planning.

Decision-makers in government and the private sector face difficult decisions in determining what, when, and how to adapt infrastructure given the uncertainty of climate outcomes. Resources provided through the PPCR are helping decision-makers determine the level of vulnerability to climate change and the most appropriate and cost effective adaptation measures for critical infrastructure by improving the accuracy and availability of data to quantify risks. Tools are being integrated into budgetary and planning processes to screen for climate risks. Grants and concessional finance are being deployed to cover the additional cost of measures to climate-proof infrastructure. Taken together these investments are synergistic: systematic use of better climate data and models improves the ability to accurately assess risks, which leads to more appropriate climate-proofing and adaptation measures in specific projects.

#### **Methodologies to Manage Risks from Climate Change**

Adjusting to the need for climate-resilient development will mean integrating actions and responses to the physical, social, and economic impacts of climate change into all aspects of development planning and investment. Consistent with the principles of the PPCR, the Asian Development Bank (ADB) is seeking to assist its developing member countries to enhance the climate resilience of vulnerable sectors—such as transport, agriculture, energy, water, and health—by “climate proofing” investments in these sectors to ensure their intended outcomes are not compromised by climate change. In 2011 ADB introduced guidelines for climate-proofing road transport designed to present a step-by-step methodological approach to assist project teams to incorporate climate change adaptation measures into road connectivity projects (see Figure 6). While the focus of these guidelines is on the project level, an improved understanding of climate change impacts should also be used in the design of infrastructure planning and development policies and strategies to ensure appropriate resource allocation.<sup>15</sup>

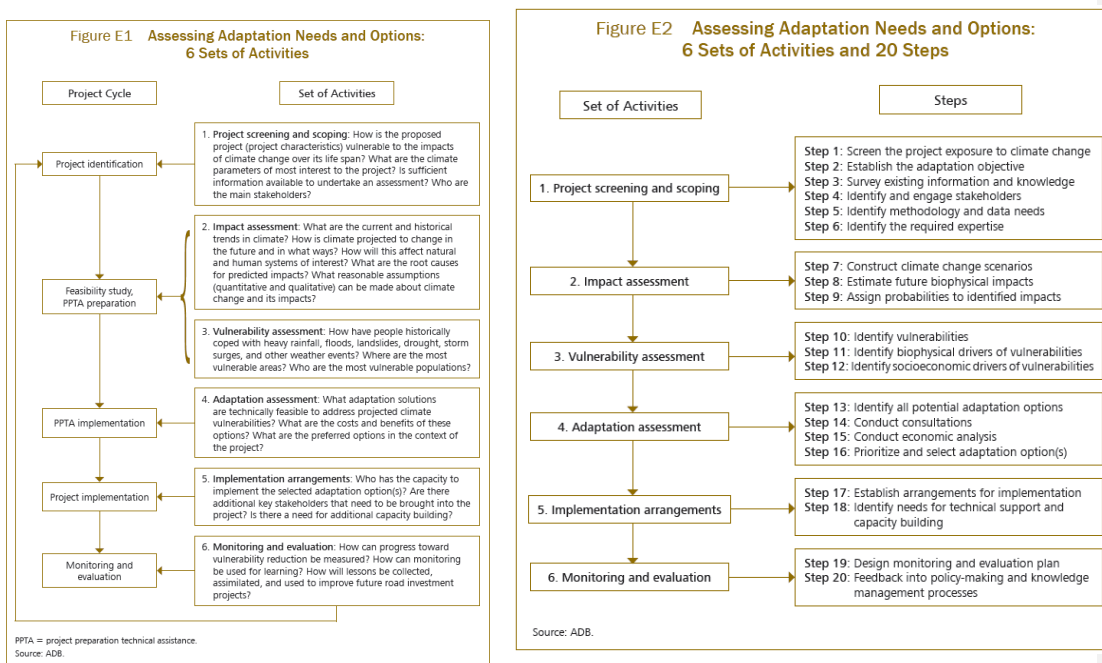
Site-specific analysis is needed to assess and evaluate climate change vulnerabilities, threats, and impacts and identify appropriate adaptation responses for a given project. ADB is seeking to undertake a comprehensive end-to-end climate risk management of projects, and has developed a methodological approach encompassing an expanding suite of tools to screen projects for climate vulnerabilities and identify appropriate and cost effective adaptation measures. Initially, this approach was used in developing guidance materials for climate proofing investments in the transport sector focusing on road infrastructure. Similar guidance documents are being prepared for other sectors using this framework. Application of this methodological approach is currently being tested at the project level across selected projects including those funded through the PPCR.

---

<sup>15</sup> Asian Development Bank. Guidelines for climate proofing investment in the transport sector: Road infrastructure projects. Mandaluyong City, Philippines: Asian Development Bank, 2011

Project screening may not result in immediate action; in some cases, climate impacts may not materialize for decades and the cost of immediate action would outweigh the benefits. But screening tools identify risks, improve climate “readiness,” (i.e., the ability to respond to climate risks when they materialize) and generate awareness about appropriate adaptation measures to be implemented whenever action is warranted.

Figure 9. Assessing adaptation needs and options: 6 sets of activities and 20 steps from the ADB



### Climate-Proofing in Action: Building Coastal Climate Resilient Infrastructure in Bangladesh

Bangladesh is one of the most vulnerable countries to climate change, and the impacts of climate change threaten the significant achievements made by Bangladesh in the last two decades in raising incomes and reducing poverty. By 2050, climate change could make an additional 14 percent of the country extremely vulnerable to flooding and dislocate more than 35 million people in the coastal districts. Climate models predict that about 87 percent of roads in the country will be substantially inundated due to climate change by 2050.<sup>16</sup> Poor farmers are among the most vulnerable groups to climate change in Bangladesh as extreme climate events rob them of their livelihoods, as well as their assets.

<sup>16</sup> Policy Research Working Paper 5469, Climate Proofing Infrastructure in Bangladesh, The World Bank, Development Research Group, Environment and Energy Team, November 2010.

Supported by financing provided through the PPCR, ADB recently approved the Coastal Climate Resilient Infrastructure Project, which aims to safeguard livelihoods in 12 rural coastal districts by enhancing the resilience of coastal infrastructure to climate change. The project will target two critical classes of assets for resilience measures: roads and market facilities. In addition, the project will support actions to enhance communities' adaptive capacity, including upgraded disaster shelters. The project will also support local governments to develop climate assessment and planning tools, such as a climate resilient rural infrastructure management plan, and integrate these into development planning. PPCR financing will support the incremental cost of climate proofing measures, which are estimated at 30-40 percent above "business as usual" standards.

During the project's design stage, the design team applied climate risk screening similar to the methodology described in Figure 6 to assess climate impacts and identify appropriate adaptation measures for the different types of infrastructure. For the roads, resilience measures will include widening and raising embankments, improving cross drainage to reduce water-logging of adjacent lands, and protecting against erosion through planting along embankments. The project provides for quality assurance measures during construction to ensure that construction meets engineering and resilience standards, as well as a maintenance plan for proper upkeep of the roads. At the large market facilities, new market sheds will be constructed on concrete plinths raised to account for maximum high tides and sea level rise and the central market areas will be paved at a similar level. Cyclone shelters will be connected to paved climate resilient roads and upgraded with adequate water storage, sustainable power supply and appropriate toilet facilities to ensure that they are accessible and usable during disasters.

A key feature of the project is that climate-proofed and disaster-resilient designs not only withstand extreme climate events, but serve people when they need them most by facilitating delivery of goods and services across disaster-affected areas and safeguarding lives and livestock during extreme weather events. An estimated 3.5 million people are expected to directly benefit from the project.

Consistent with the programmatic approach fostered by PPCR, this project will have synergistic benefits with other projects included in Bangladesh's strategic program for climate resilience, which targets climate resilient housing and climate resilient water supply and sanitation in coastal areas.

**Box 16: Incorporating climate resilience into the energy sector in Tajikistan**

Hydropower provides 98 percent of Tajikistan's electricity. Hydropower facilities also play critical roles in water management and irrigation, with some facilities such as Kairakkum on the Syr Darya River constructed for irrigation, as well as power generation.

Tajikistan's hydropower plants are highly vulnerable to climate change threats as they depend upon

river basin discharge fed by glacial and snow melt. Consequent to global warming, significant increases in glacial melt and melting of accumulated snow in Tajikistan are expected in the next few decades, leading to drastic seasonal water deficits as the mass of glacial ice and accumulated snow shrinks. The vulnerability of Tajikistan hydropower industry is exacerbated by the fact that the physical infrastructure has been weakened by low maintenance and investment owing to civil war, natural disasters, financial constraints, and poor management.

The European Bank for Reconstruction and Development (EBRD), with the support of the PPCR, is helping to find solutions to these serious problems. In 2010, the Government of Tajikistan requested EBRD financing to rehabilitate the 126 MW Kairakkum hydropower plant. In response, EBRD launched an innovative research program to analyze the vulnerability of Tajikistan's hydropower facilities to climate change and to identify options for improving the climate resilience of both the facilities and the hydropower sector overall. A major investment program is now under development, with anticipated PPCR grant support. This will support specific climate resilience measures and appropriate climate-proofing options to be determined through a detailed feasibility study currently underway.

PPCR financing will also support institutional measures to strengthen climate resilience in the hydropower sector, such as improved monitoring systems at Kairakkum and other hydropower plants to track changes in key climate or hydrological parameters and adjust plant management accordingly.

#### **The Asian Development Bank**

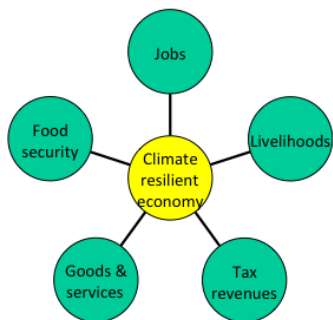
Over the past decade, Asia and the Pacific have made significant progress in achieving the Millennium Development Goals. However, accelerating climate change is threatening to reverse these gains, and those who are already economically and socially vulnerable are likely to suffer soonest and most. To enable member countries to cope with the inevitable impacts already locked into the climate system, as well as to transition them to low-carbon economies, ADB is working with urgency to put in place integrated solutions that will address both the causes and consequences of climate change in the region.

## ADAPTATION AND BUSINESS

### UNLOCKING THE POTENTIAL OF THE PRIVATE SECTOR IN ADAPTING TO CLIMATE CHANGE

By the European Bank for Reconstruction and Development (EBRD)

**Adapting to climate vulnerability and change is not just the responsibility of the public sector;** entire economies must be transformed in order to meet the challenge. The huge adaptation financing needs faced over the coming decades cannot be met by public budgets alone. Furthermore, adaptation is also in businesses' own interests, as they need to ensure that their assets and operations are resilient to climate change.



**Business perceptions of the relevance of climate change are changing.** Climate change was ranked as the most significant risk to the global economy over 2010-2020 at the 2012 World Economic Forum<sup>17</sup>. Climate change has a diverse range of impacts that may affect businesses. Primary impacts such as shifts in temperature and precipitation, and sea-level rise, may have a range of complex secondary impacts on water resources, agriculture, coastal areas, human health, forests and natural habitats that may have serious implications for businesses, the resource bases they use and the markets on which they rely.

However there remain important challenges in spreading this awareness amongst businesses in low-income countries, where the impacts of climate change are often most keenly felt. The CIF, through the Pilot Program for Climate Resilience (PPCR), is playing an important role in this respect by mainstreaming private sector considerations into its programmes and projects in PPCR pilot countries. The PPCR process pays special attention to engaging with the private sector, alongside a broad range of other stakeholders, in the development of country-level strategic programmes for climate resilience.

<sup>17</sup> Sources: World Economic Forum, 2011



**Unmanaged climate risks pose important threats to businesses.** Climate change will result in changes in demand for the goods and services that businesses produce. It may have negative effects on their output and accelerate the deterioration of key assets (e.g. buildings and machinery may be vulnerable to extreme events such as storms and floods). Such impacts will result in increased maintenance and operating costs for businesses, as well as increasing the cost of insuring their assets. Left unmanaged, these threats may harm businesses' competitiveness and profit margins. Climate vulnerability and change represents a challenge to which businesses will need to adapt in order to remain competitive.

Specific types of climate risks that affect businesses include the following:

- Financial: Debt repayment capacity and underlying cash flows may be affected by climate change impacts on revenue generation. Climate change impacts on business performance may also affect the valuation of those businesses.
- Operational: Climate change may result in direct physical impacts on facilities (e.g. storm damage to buildings), as well as indirect impacts, such as disruption to power supplies or transport links.
- Environmental and social: Climate change may exacerbate the impacts that businesses have on the local environment and communities, for example by worsening soil erosion or intensifying competition for increasingly scarce water resources.
- Legal and reputational: Climate change impacts may now be regarded in some jurisdictions as "reasonably foreseeable," which means that businesses that fail to prepare for them may find themselves liable.

**Addressing climate change risks can create business opportunities.** These may include competitive advantages in view of the changing conditions, as well as opportunities for new products and markets. Seizing these opportunities requires taking action and building a business case for adaptation, which may include the following actions:

- Providing better information on climate-related risks and opportunities
- Adopting regulation and legislation that incentivises business adaptation
- Investor standards that specify climate risk management (e.g. MDBs, Equator Banks)
- Financial incentives for private sector adaptation, e.g. concessional finance through PPCR programmes
- Corporate governance for climate risk management, e.g. shareholder pressure, ratings agencies
- Reputational risk management, e.g. in order to avoid conflict over climate-sensitive resources such as water

Through the PPCR, the CIF is helping to create opportunities for adaptation action by businesses. For example, in Tajikistan the World Bank is working with the State Hydro-Meteorological Agency to enable them to provide improved weather and hydrological forecasts that will benefit farmers and hydropower operators. The PPCR is also supporting the authorities in St Lucia to develop a Climate Adaptation Loan

Facility that will provide affordable loans to small businesses to help them invest in climate resilience measures such as flood protection.

**Climate change matters for businesses, in both the short-term and the long-term.** In the short-term businesses need to be able to cope with the immediate climate vulnerabilities created by existing climate stresses, such as water scarcity and climatic variability that may affect agricultural production, for example. In the long-term, it is important for businesses to be able to make decisions that are informed by a sound understanding of anticipated climate change. For example, ports built in the 1990s using information based on historic sea level records may be vulnerable over the coming decades. In some countries, water utilities are developing forward-looking plans that use experience gained through recent past weather events in the future planning of water supplies.

Adaptation relates to both of these challenges: managing businesses' vulnerability to short-term, extreme events, and coping with long-term changes in climate patterns. These challenges need different responses, which in turn require an understanding of the barriers that businesses face, and the development of partnerships to promote business action on adaptation.

**There are important barriers to private sector action on adaptation.** These obstacles must be overcome so that businesses can make better-informed decisions that enable them to identify and manage climate change risks.

- Long-term impacts vs. short-term needs: There is often a mismatch between the longer term nature of climate change impacts, which often have a time-horizon of decades, and the shorter term planning horizons of up to two to three years that many businesses use.
- Poor information: Businesses often suffer from a lack of information about climate change impacts, as well as a lack of useable information about both shorter-term weather conditions and longer-term climate change.
- Lack of good quality data: In many developing countries there is an acute lack of good-quality weather and climate data, often due to a lack of monitoring stations, or local capacity for modeling and forecasting.
- Managing uncertainty: A certain degree of uncertainty is inherent in all climate change projections, but this is exacerbated by poor data availability and limited analytical capacity. Uncertainty about the nature, scale and timing of climate change impacts also makes it more difficult for businesses to make decisions about how to manage climate change risks.

**Partnerships are the key to private sector action on adaptation.** Governments and regulators have an important role to play in setting the right incentives for business action on adaptation, while financing mechanisms like the CIF can encourage innovative partnerships with businesses and creating an enabling environment. PPCR pilot countries have begun to develop innovative approaches for unlocking the potential of businesses to contribute towards climate resilience. The challenge for the emerging international climate finance architecture will be to scale up these approaches in the years ahead.

Box 17. Snapshot of PPCR private sector project pipeline

PPCR pilot	Project	Sectoral focus
Bangladesh	Promoting Climate Resilient Agriculture and Food Security	Agriculture/Food security
Bangladesh	Feasibility Study for a Pilot program of Climate Resilient Housing in the Coastal Region	Infrastructure
Mozambique	Developing Climate Resilience in the Agricultural and Peri-Urban Water Sectors through Provision of Credit Lines from Mozambican Banks	Agriculture/Food security
Mozambique	Developing Community Climate Resilience Through Private Sector Engagement in Forest Management	Forestry
Nepal	Building Climate Resilient Communities through Private Sector Participation	Agriculture/Food security
Niger	Project for the Improvement of Climate Forecasting Systems and Operationalization of Early Warning Systems (PDIPC)	Forecasting and early warning
Niger	Community Action Project for Climate Resilience (CAPCR)-Private Sector Investment to Build Climate Resilience in Niger's Agricultural Sector	Sustainable land management
Niger	Project for Sustainable Management and Control of Water Resources (PROMOVARE)	Water management
Zambia	Private Sector Support to Climate Resilience	Agriculture/food security

**Targeted support for businesses can help them to manage climate change impacts.** In some countries, dedicated programmes exist to help businesses understand and respond to climate risks. For example, in the United Kingdom, the UK Climate Impacts Programme offers support and guidance to businesses in the form of research, decision-making tools, and information resources. The UK Meteorological Office provides a range of business-oriented weather and climate information services. MDBs are also instituting research to support climate resilient development in emerging economies (see Box 17).

Through the PPCR, the CIF is helping developing countries to begin to strengthen these kinds of capacities through its support for the development of improved meteorological and hydrological

forecasting systems in countries as diverse as Tajikistan, Mozambique and Yemen. The longer-term challenge will be to strengthen these capacities further so that they can provide the kinds of information services that can help businesses to make better decisions around managing risks posed by climate variability and change.

**Climate-resilient businesses contribute towards national climate resilience.** Promoting climate-resilience at the level of an individual business is part of a wider picture. Businesses need to ensure that their own assets and the operations they rely on, such as infrastructure and supply chains, are resilient to climate change in order to ensure financial, environmental and social sustainability, and safeguard growth opportunities and market share. The climate resilience of businesses is essential for national-level climate resilience, as well as for sustainable economic development.

#### **The European Bank for Reconstruction and Development**

The most immediate and tangible impacts of climate change are felt through its influence on water—either not enough, which can lead to droughts, or too much in the form of storms, floods and rising sea levels. Climate change is thought to be a real threat to water resource management in some of the more water-stressed parts of Central Asia and the Caucasus, south-eastern Europe, Turkey and the Southern and Eastern Mediterranean. In response to this, the European Bank for Reconstruction and Development (EBRD) is developing innovative investments to help businesses and communities cope with increased water stress and an increasingly variable climate.

In Central Asia, this has included investing in the rehabilitation of water supply infrastructure to reduce water losses and cope with seasonal variability in water availability. Hydropower is another important sector that is highly vulnerable to climate-driven variability in river flows. As part of the PPCR in Tajikistan, the EBRD is leading on innovative work in partnership with the state power utility, Barki Tojik, and the State Hydro-Meteorological Agency to invest in the rehabilitation of Tajikistan's ageing hydropower dams so that they are better able to cope with fluctuations in river flows due to glacial melting and seasonal extremes.

The EBRD region is home to many businesses that are intensive users of water, for example, food production, mining and manufacturing. Industrial water efficiency is a challenge for many of EBRD's private sector clients in these sectors. In response, EBRD is now conducting water use audits, usually combined with analyses of climate change impacts on water availability, as part of the development of its investments in water-intensive businesses. For example, in Bosnia & Herzegovina the EBRD carried out a water use audit of a paper and pulp mill that led to the identification of significant potential water savings that were subsequently incorporated into the €11 million refit of the facility.

The EBRD also recognises that innovative approaches are needed towards achieving a better understanding of climate vulnerabilities and adaptation priorities of businesses and of the private sector more broadly. In response to this, in Turkey the EBRD and International Finance Corporation (IFC) are

collaborating on a pilot climate change adaptation market study to understand businesses' vulnerability to climate change and the kinds of technical and financial support that they may need to cope.

Off set with colored paper, 1-pager

**Box 18. How knowledge on climate risk can help businesses create adaptation responses**

By International Finance Corporation (IFC)

Recognizing the gaps in information of how climate change will affect the private sector and of the potential significance of the risks to investors, International Finance Corporation (IFC) has initiated the Climate Risk Program, a series of studies that analyzes climate risks and develops methodologies for adaptation options for projects taken from sectors such as hydropower, ports, agribusiness and manufacturing, and from a variety of the world's regions.

One example is IFC's Climate Risk and Business: Ports study, done in collaboration with IFC's client port Muelles el Bosque (Cartagena, Colombia). Ports play a vital role in the world economy; more than 80 percent of goods traded worldwide are transported by sea. It is also among the sectors most exposed to climate change. However, a survey of several hundred ports found that although almost all respondents planned investing in new infrastructure in the next few years, most were not considering climate change impacts.

The study identified possible reasons for not planning, including a general lack of information specific to how a port's operations and key components will be materially affected by climate change impacts. Additionally, very few businesses, particularly in developing countries, have the capacity and resources to produce such information.

IFC's ports study produced a methodological framework for assessing climate risks and opportunities to ports and helped Muelles el Bosque develop its adaptation strategy and investment priorities. One of the immediate outcomes of the work was the port's announcement of multi-million investments in adaptation actions recommended by the study. At the same time, the study's general approach is designed in such a way to allow other ports follow the same steps towards increasing its climate resilience.

Despite the challenges and uncertainties inherent in undertaking such assessments, the Climate Risks Program studies have been able to generate new information related to climate risks and recommend specific adaptation actions to a variety of businesses across different locations. They have also demonstrated some of the practical approaches that can be applied by businesses to understand these risks better, to react as necessary, and to reduce uncertainty about the future. Ultimately, the ability of businesses to adapt to climate change will depend not only on their own actions but also on the actions

that may be needed from the public sector, non-government organizations, the scientific community and other stakeholders.

Visit [www.ifc.org/climaterisks](http://www.ifc.org/climaterisks)